# **McGuireWoods**

McGuireWoods LLP Gateway Plaza 800 East Canal Street Richmond, VA 23219-3916 Phone: 804.775.1000 Fax: 804.775.1061 www.mcguirewoods.com Jontille D. Ray Direct: 804.775.1173 jray@mcguirewoods.com

## **PUBLIC VERSION**

June 12, 2024

## **BY HAND DELIVERY**

Bernard Logan, Clerk Document Control Center State Corporation Commission 1300 E. Main St., Tyler Bldg., 1<sup>st</sup> Floor Richmond, Virginia 23219

Application of Virginia Electric and Power Company for approval of its 2022 DSM Update pursuant to § 56-585.1 A 5 of the Code of Virginia <u>Case No. PUR-2022-00210</u>

Dear Mr. Logan:

Enclosed for filing in the above-referenced proceeding are an original and one (1) copy of the **PUBLIC VERSION** of Virginia Electric and Power Company's June 12, 2024 Evaluation, Measurement & Verification Report prepared by DNV (Volumes 1-8). An extraordinarily sensitive version is also being filed under seal under separate cover.

Please do not hesitate to call if you have any questions regarding the enclosed.

Highest regards,

/s/ Jontille D. Ray

Jontille D. Ray

Enclosures

Cc: Paul E. Pfeffer, Esq. Lisa R. Crabtree, Esq. Vishwa B. Link, Esq. Briana M. Jackson, Esq. Service Lists

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#### **CERTIFICATE OF SERVICE**

I hereby certify that on this 12<sup>th</sup> day of June 2024, a true and accurate copy of the foregoing filed in Case No. PUR-2022-00210 was hand delivered, electronically mailed, and/or mailed first class postage pre-paid to the following:

Kiva Bland Pierce, Esq. Mary Beth Adams, Esq. Austin Skeens, Esq. Anna Dimitri, Esq. Office of General Counsel State Corporation Commission 1300 E. Main Street, Tyler Bldg., 10<sup>th</sup> Fl. Richmond, VA 23219

Nathaniel Benforado, Esq. E. Grayson Homes, Esq. Josephus Allmond, Esq. Rachel James, Esq. Tyler Demetrious, Esq. Southern Environmental Law Center 120 Garrett Street, Suite 400 Charlottesville, VA 22902 C. Meade Browder, Jr., Esq. John E. Farmer, Jr., Esq. Carew S. Bartley, Esq. Office of the Attorney General Division of Consumer Counsel 202 N. Ninth Street Richmond, VA 23219

Cale Jaffe, Esq. Mr. Sebastian van Bastelaer University of Virginia School of Law 580 Massie Rd. Charlottesville, VA 22903

/s/ Jontille D. Ray



WHEN TRUST MATTERS

# EVALUATION, MEASUREMENT, AND VERIFICATION REPORT

Developed for: Virginia Electric and Power Company (Dominion Energy Virginia/Dominion Energy North Carolina)

Case No. PUR-2022-00210 (Virginia) Docket No. E-22, Sub 676 (North Carolina)

Public version June 12, 2024 Prepared by DNV Energy Insights USA Inc. (DNV)





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# Data reflective of 2024 EM&V report and actuals for 2023

## as of 5/30/2024

| Jag         VEAR         VCEA         DSM1-8<br>MWh         DSM9<br>MWh         DSM10<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>MWh         DSM %*           2022         852,892         1.25%         775,939         2,693         -         -         58,754         837,387         1.23%           2023         1,705,783         2.50%         868,216         37,427         3,875         -         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           2022         852,892         1.25%         1,006,813         3,275         -         -         58,754         1,268,843         1.9%           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2024         2,558,675         3.75%         1,401,765         105,5 | year         VCEA         DSM1-8<br>Target %         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>MWh         DSM %*           2022         852,892         1.25%         775,939         2,693         -         -         58,754         887,387         1.23%           2023         1,705,783         2.50%         868,216         37,427         3,875         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,622         2.2%           Table 2           Taget %         MWh                       | yran         VCEA         Target         MWh         DSM1         DSM10         DSM11         DSM11         Op-Out         Total DSM         DSM %**           2022         852,892         1.25%         775,939         2,693         -         -         58,754         837,387         1.23%           2024         1.705,783         2.50%         868,216         37,427         3,875         -         -         58,754         837,387         1.23%           2024         2.558,675         3.75%         92,066         88,153         37,213         -         60,955         1,19,7890         1.8%           2025         3.411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Tabe 1           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2024         1.705,778         2.50%         1,366,226         43,153         4,306         -         -         59,855         1,463,538         2.3%           2024         2.558,675         3.75%         1,401,765         105,51                                              | _     |      |                    |                  |               | Table 1     |              |              |              |                 |                              |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------|--------------------|------------------|---------------|-------------|--------------|--------------|--------------|-----------------|------------------------------|---------|
| VEX         VCEA         DSM1-8         DSM9         DSM10         DSM11         DSM12         Opt-Outs         Total DSM         DSM %**           VEA         VCEA         Target %         MWh         MWh         MWh         DSM10         DSM11         DSM12         Opt-Outs         Total DSM         Forecast           VEAR         VCEA         Target %         MWh         MWh         MWh         DSM10         DSM11         DSM12         Opt-Outs         Total DSM         Forecast         MWh                      | 2022         852,892         1.25%         775,939         2,693         -         -         -         58,754         837,387         1.23%           2023         1,705,783         2.50%         868,216         37,427         3,875         -         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,880         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Table 2           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,256,813         3,275         -         -         -         58,754         1,268,843         1.9%           2021         852,892         1.25%         1,206,813         3,275         -         -         -         59,855         1,463,538         2.1%           2023                                                                           | And Barl         2022         852,892         1.25%         775,939         2,693         -         -         -         58,754         837,387         1.23%           2023         1,705,783         2.50%         868,116         37,427         3,875         -         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Taget %         WWh         MWh         2022         852,892         1.25%         1,268,843         1.9%                                                         | leter | YEAR | VCEA Target<br>MWh | VCEA<br>Target % | DSM1-8<br>MWh | DSM9<br>MWh | DSM10<br>MWh | DSM11<br>MWh | DSM12<br>MWh | Opt-Outs<br>MWh | Total DSM<br>MWh             | DSM %** |
| V         2023         1,705,783         2.50%         868,216         37,427         3,875         -         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Table 2           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341                                    | V         2023         1,705,783         2.50%         868,216         37,427         3,875         -         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Table 2           VEAR         VCEA Target<br>MWh         VCEA         DSM12<br>Target %         DSM19<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %**           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,95 | 2023         1,705,783         2.50%         868,216         37,427         3,875         -         -         59,855         969,372         1.4%           2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Taget WCEA Target WCEA Target MWh         DSM1         DSM10         DSM11         DSM12         Opt-Outs         Total DSM Forecast MWh         DSM %**           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2024         1,705,783         2.50%         1,356,226         43,153         4,006         -         59,855         1,463,538         2.1%           2024         2,558,675         5.78%         1,401,765         105,510         96,551         40,050         -         59,855         1,764,813         2.5%           2024         2,558,675         5.00%         1,                               | LIV   | 2022 | 852,892            | 1.25%            | 775,939       | 2,693       | -            | -            | -            | 58,754          | 837,387                      | 1.23%   |
| 2       2024       2,558,675       3.75%       922,063       89,506       88,153       37,213       -       60,955       1,197,890       1.8%         2025       3,411,567       5.00%       932,662       158,852       261,694       89,617       19,748       62,055       1,524,628       2.2%         Table 2         Table 2         YEAR       VCEA Target<br>MWh       DSM1-8<br>Target %       DSM9<br>MWh       DSM10<br>MWh       DSM11<br>MWh       DSM12<br>MWh       Opt-Outs<br>MWh       Total DSM<br>Forecast<br>MWh       DSM %*         2022       852,892       1.25%       1,206,813       3,275       -       -       58,754       1,268,843       1.9%         2023       1,705,783       2.50%       1,356,226       43,153       4,306       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%         All values exclude NC and non-Jurisdictional DSM reductions                                     | 2         2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Table 2           2022         852,892         1.25%         DSM1-8<br>MWh         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-outs<br>MWh         Total DSM<br>Forecast<br>MWh           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         59,855         1,704,831         2.5%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055       | 2024         2,558,675         3.75%         922,063         89,506         88,153         37,213         -         60,955         1,197,890         1.8%           2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           YEAR         VCEA Target<br>MWh         DSM1-8<br>Target %         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh           2022         852,892         1.25%         1,206,813         3,275         -         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,3006         -         -         59,855         1,403,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0% | La    | 2023 | 1,705,783          | 2.50%            | 868,216       | 37,427      | 3,875        | -            | -            | 59,855          | 969,372                      | 1.4%    |
| 2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           V         VCEA Target<br>MWh         VCEA<br>Target %         DSM1-8<br>MWh         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %*           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                              | 2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Table 2           VEAR         VCEA Target<br>MWh         DSM1-8<br>MWh         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %**           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                         | 2025         3,411,567         5.00%         932,662         158,852         261,694         89,617         19,748         62,055         1,524,628         2.2%           Table 2           Table 2           VEAR         VCEA Target<br>MWh         VCEA<br>Target %         DSM1-8<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>Forecast<br>MWh         Total DSM<br>Forecast<br>MWh           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                   | Ne    | 2024 | 2,558,675          | 3.75%            | 922,063       | 89,506      | 88,153       | 37,213       |              | 60,955          | 1,197,890                    | 1.8%    |
| Table 2           YEAR         VCEA<br>MWh         DSM1-8<br>Target %         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %*           2022         852,892         1.25%         1,206,813         3,275         -         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                                                                                                                                                                       | YEAR         VCEA Target<br>MWh         VCEA<br>Target         DSM1-8<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %*           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                                                                                                                                                                                                             | Table 2         YEAR       VCEA Target       VCEA       DSM1-8       DSM9       DSM10       DSM11       DSM12       Opt-Outs       Forecast       DSM **         2022       852,892       1.25%       1,206,813       3,275       -       -       58,754       1,268,843       1.9%         2023       1,705,783       2.50%       1,356,226       43,153       4,036       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | 2025 | 3,411,567          | 5.00%            | 932,662       | 158,852     | 261,694      | 89,617       | 19,748       | 62,055          | 1,524,628                    | 2.2%    |
| Upp         YEAR         VCEA Target         DSM1-8<br>MWh         DSM9<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %**           2022         852,892         1.25%         1,206,813         3,275         -         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                                                                                                                                                                                 | YEAR         VCEA Target<br>MWh         VCEA<br>Target %         DSM1-8<br>MWh         DSM19<br>MWh         DSM10<br>MWh         DSM11<br>MWh         DSM12<br>MWh         Opt-Outs<br>MWh         Total DSM<br>Forecast<br>MWh         DSM %*           2022         852,892         1.25%         1,206,813         3,275         -         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                                                                                                                                                                            | UP         VCEA         Target         VCEA         DSM1-8         DSM9         DSM10         DSM11         DSM12         Opt-Outs         Total DSM           2022         852,892         1.25%         1,206,813         3,275         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         58,754         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3,0%                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |      |                    |                  |               | Table 2     |              |              |              |                 | ·                            |         |
| 2022       852,892       1.25%       1,206,813       3,275       -       -       -       58,754       1,268,843       1.9%         2023       1,705,783       2.50%       1,356,226       43,153       4,306       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | v         2022         852,892         1.25%         1,206,813         3,275         -         -         -         58,754         1,268,843         1.9%           2023         1,705,783         2.50%         1,356,226         43,153         4,306         -         -         59,855         1,463,538         2.1%           2024         2,558,675         3.75%         1,401,765         105,510         96,551         40,050         -         60,955         1,704,831         2.5%           2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2022       852,892       1.25%       1,206,813       3,275       -       -       -       58,754       1,268,843       1.9%         2023       1,705,783       2.50%       1,356,226       43,153       4,306       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Neter | YEAR | VCEA Target<br>MWh | VCEA<br>Target % | DSM1-8<br>MWh | DSM9<br>MWh | DSM10<br>MWh | DSM11<br>MWh | DSM12<br>MWh | Opt-Outs<br>MWh | Total DSM<br>Forecast<br>MWh | DSM %** |
| 2023       1,705,783       2.50%       1,356,226       43,153       4,306       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2023       1,705,783       2.50%       1,356,226       43,153       4,306       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2023       1,705,783       2.50%       1,356,226       43,153       4,306       -       -       59,855       1,463,538       2.1%         2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       | 2022 | 852,892            | 1.25%            | 1,206,813     | 3,275       | -            | -            |              | 58,754          | 1,268,843                    | 1.9%    |
| 2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%         All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2024       2,558,675       3.75%       1,401,765       105,510       96,551       40,050       -       60,955       1,704,831       2.5%         2025       3,411,567       5.00%       1,403,332       187,643       282,244       98,125       23,943       62,055       2,057,341       3.0%         All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2024 2,558,675 3.75% 1,401,765 105,510 96,551 40,050 - 60,955 1,704,831 2.5%<br>2025 3,411,567 5.00% 1,403,332 187,643 282,244 98,125 23,943 62,055 2,057,341 3.0%<br>All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 22    | 2023 | 1,705,783          | 2.50%            | 1,356,226     | 43,153      | 4,306        | -            | -            | 59,855          | 1,463,538                    | 2.1%    |
| 2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%           All values exclude NC and non-Jurisdictional DSM reductions         All values         98,125         23,943         62,055         2,057,341         3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2025 3,411,567 5.00% 1,403,332 187,643 282,244 98,125 23,943 62,055 2,057,341 3.0%<br>All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2         2025         3,411,567         5.00%         1,403,332         187,643         282,244         98,125         23,943         62,055         2,057,341         3.0%           All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2     | 2024 | 2,558,675          | 3.75%            | 1,401,765     | 105,510     | 96,551       | 40,050       |              | 60,955          | 1,704,831                    | 2.5%    |
| All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | All values exclude NC and non-Jurisdictional DSM reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ٦     | 2025 | 3,411,567          | 5.00%            | 1,403,332     | 187,643     | 282,244      | 98,125       | 23,943       | 62,055          | 2,057,341                    | 3.0%    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |      |                    |                  |               |             |              |              |              |                 |                              |         |

# DEV DSM Dashboard



#### 2023 at a Glance

| Total Programs                       |             | Progress Toward          | is \$870M GTSA Goa  | al         |                 |                                   |
|--------------------------------------|-------------|--------------------------|---------------------|------------|-----------------|-----------------------------------|
| Residential:                         | 22          | \$797.0 M Prop           | osed                |            |                 |                                   |
| Business:                            | 21          | 24                       |                     |            |                 |                                   |
| Residential / Business:              | 1           |                          |                     |            |                 |                                   |
| *Note - Phase XI Programs Launch '24 |             |                          |                     |            |                 |                                   |
|                                      |             | Progress Toward          | s VCEA Savings Tar  | gets       |                 |                                   |
| Total Participants                   |             | As a percentage          | of 2019 sales       |            |                 |                                   |
| Residential:                         | 357,260     | 2023 Net MWh             |                     | 969,373    | 1.42%           |                                   |
| EE Products - Appliances             | 19,118      | 2023 Gross MW            | 1                   | 1,463,539  | 2.14%           |                                   |
|                                      |             | 2019 VA Jurisdictional S | ales MWh            | 68,231,332 |                 |                                   |
| Business:                            | 2,218       | * Includes 59,855 MWh fo | r Opt Out Customers |            |                 |                                   |
|                                      |             | Annual Spend             |                     |            | Annual S        | pend                              |
|                                      |             | Portfolio                |                     |            | IAQ Prog        | rams                              |
|                                      |             | \$85.0 M                 |                     |            | \$24.0          | M                                 |
| kWh Saved - Portfolio                |             |                          |                     |            | * Includes \$14 | .3M for HB2789 HVAC / Solar       |
| Net:                                 | 135,984,938 |                          |                     |            |                 |                                   |
| Gross:                               | 197,221,252 | Total Customer E         | Bill Savings        |            | DSM Rela        | ated Emission                     |
| * Annualized Savings                 |             | Residential:             | \$8,182,671         |            | Reductio        | ns (Metric Tons CO <sub>2</sub> ) |
|                                      |             | Business:                | \$10,149,822        |            | Total           | 523,559                           |
| kW Saved - Portfolio                 |             |                          |                     |            |                 |                                   |
| Net:                                 | 276,505     |                          |                     |            |                 |                                   |
| Gross:                               | 350,027     | Energy Saved Sin         | ce Inception        |            |                 |                                   |
|                                      |             | Portfolio                |                     |            |                 |                                   |
|                                      |             | Net MWh:                 | 6,503,739           |            |                 |                                   |

Gross MWh:

9,573,390

## **Executive summary**

This EM&V report, prepared by DNV Energy Insights USA (DNV) on behalf of Virginia Electric and Power Company (Dominion Energy or the Company),<sup>1</sup> presents the key performance indicators of the Company's Phases II-XI demand-side management (DSM) programs in Virginia and North Carolina. It also reports DSM program impacts for 37 active energy efficiency and demand response programs through December 31, 2023. The 2023 EM&V report complies with multiple Virginia and North Carolina regulatory orders, rules, and other legislative requirements for evaluation, measurement, and verification (EM&V) reporting. Further details on these requirements appear in the Introduction section of the report.<sup>2</sup>

# Gross energy savings toward Virginia Clean Economy Act (VCEA): 1,404 GWh Net energy savings toward VCEA: 910 GWh<sup>3</sup> Spending toward Grid Transformation and Security Act (TSA) \$276M<sup>4</sup> Projected spending toward GTSA: \$797M<sup>5</sup> Spending toward VCEA income and age qualifying 15% (arget: \$25M or 9% of the \$276M<sup>4</sup>)

<sup>2</sup> Virginia State Corporation Commission (SCC) Case No. PUE-2009-0008, March 24, 2010, ordered annual EM&V report filings in Virginia.

- <sup>4</sup> As of year end 2023; includes O&M, capital spending, common costs, and margin.
- <sup>5</sup> Based on programs filed with or approved by SCC as of year end 2022; includes O&M, capital spending, common costs, and margin.
- <sup>6</sup> As of year end 2023; includes O&M, capital spending, common costs, and margin. Per legislation, the 15% target does not include the House Bill 2789 3-year program approved by the SCC.

<sup>&</sup>lt;sup>1</sup> Virginia Electric and Power Company may also include North Carolina operations depending on the context.

<sup>&</sup>lt;sup>3</sup> As of year end 2023.

In 2023, Dominion Energy ran more than 37 energy efficiency and demand response programs serving the residential, income and age qualifying, and non-residential sectors.

In 2023, these programs achieved:

\$18M/year

\$4M/year

for customers

524k metric tons CO<sub>2</sub> avoided/year

92M gal/year

of water savings

7,043 GWh

of lifetime savings

DNV completed impact evaluations and in-depth studies of the following demand response programs for program year 2023:

- Residential Thermostat Rewards Demand Response (DR) Program
- Non-Residential Distributed Generation (DR) Program
- Residential Electric Vehicle Charger Rewards (DR) Program



## Key metrics

This report presents performance indicators for Dominion Energy's DSM programs in Virginia and North Carolina in compliance with legal requirements in both states.

The key metrics summarized are:



Program expenditures include operations and maintenance (O&M), capital spending, and common costs. O&M spending includes direct rebates, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported here do not include the Company's margins.

Participation is generally measured as the number of unique accounts that participate in a program. There are a few exceptions to this. Programs that offer rebates for individual equipment (e.g., Residential Appliance Recycling, Residential Efficient Products Marketplace, Residential EV Energy Efficiency and Demand Reduction, Residential Water Savings) often count participation by units of installed measures. Other programs, such as Non-Residential Midstream Energy Efficiency Products, count participation by the number of work orders submitted to Dominion Energy for a rebate.

Energy efficiency program savings are reported as annualized energy savings, in kilowatt



**Expenditures** 

Participation

Savings

hours per year (kWh/year), energy saved to date (kWh or MWh), and expected lifetime energy saved (kWh or MWh). We also report coincident peak demand reductions in kilowatts (kW) delivered by the program. We assume that the Company's planning summer peak is the maximum of the non-holiday weekday July hour ending 16 ET. We assume that its planning winter peak is the maximum of the non-holiday weekday January hour ending 8 ET. We report demand reductions for the demand response programs in kW and represent the estimated amount of dispatchable peak shaving potential delivered by the program under the Company's planning conditions.



1 Back

This metric encompasses emissions reductions, customer bill impacts, and O&M non-energy impacts attributable to the DSM programs.

# Active programs

This report covers programs that were open to enrollment or had participation in 2023. Figure 1 lists these active programs.

## Figure 1. Active Phases II-X demand-side management programs reported in 2023

## **Residential Energy Efficiency**

- Appliance Recycling
- Efficient Products Marketplace
- Home Energy Assessment
- Customer Engagement
- · EV Energy Efficiency and Demand Response
- Home Retrofit
- Kits

## Non-Residential Energy Efficiency

- Heating and Cooling Efficiency
- Lighting Systems & Controls (Phases VII and X)
- Office
- Manufacturing
- Window Film
- Midstream Energy Efficiency Products
- Multifamily

## Income & Age Qualifying Energy Efficiency

- Residential HVAC Health and Safety (Phase VIII)
- Solar

#### **Residential Demand Response**

- Smart Thermostat Rewards
- EV Charger Rewards
- Water Savings Demand Response

- Manufactured Housing
- Multifamily
- New Construction
- Thermostat Purchase and WeatherSmart
- Smart Home
- Virtual Energy Audit
- Water Savings
- New Construction
- Small Business Improvement Enhanced
- Agricultural Energy Efficiency
- Building Automation System
- Building Optimization
- Engagement
- Prescriptive Enhanced
- Residential Energy Efficiency (Phase IX)
- Home Improvement Enhanced (Phase X)

## **Non-Residential Demand Response**

Distributed Generation



Tables 1-9 summarize the key required metrics for the Company's energy efficiency programs. The active programs are organized into three categories: residential, income and age qualifying, and nonresidential. Within each category, the programs are further organized by the DSM phase under which they were originally filed.

The participation, energy savings, and non-energy impact values presented in Tables 2, 3, and 6-9 are produced by DNV. They are a mix of evaluated savings, deemed savings we calculated using customer rebate data collected by Dominion Energy and program implementers, and other customerspecific data applied to the energy savings protocols maintained by DNV in the Dominion Energy Technical Reference Manual (Appendix F). They also contain savings claimed by implementation vendors



using deemed approaches vetted by DNV. The deemed savings underwent a series of data quality checks prior to reporting.

The avoided cost assumptions (Table 1), financial data (Tables 2 and 3), and the benefit-cost (B/C) ratios (Tables 4-6) are produced by Dominion Energy and reported here for completeness. The B/C ratios incorporate the results from this 2023 report.

#### Table 1. Virginia program avoided costs in Program Year 2023

|                   | Avoided                      | Costs                                                       | termine the second                              | and the second design of the s | Avoided T&D De                                 | emand Costs                                     | and the second                                 | 100 Dec. 100                                   |
|-------------------|------------------------------|-------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------|------------------------------------------------|
|                   | Avoided                      | COSIS                                                       |                                                 | Transmission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | a share a share a                              |                                                 | Distribution                                   |                                                |
| Averag<br>(\$/kWh | e Capacity<br>) (\$/kW-year) | Reserve Margin<br>Forecast Pool<br>Requirement (FPR)<br>(%) | Avoided<br>Transmission<br>Cost<br>(\$/kW-year) | Avoided<br>Transmission<br>Summer Split<br>(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Avoided<br>Transmission<br>Winter Split<br>(%) | Avoided<br>Distribution<br>Cost<br>(\$/kW-year) | Avoided<br>Transmission<br>Summer Split<br>(%) | Avoided<br>Transmission<br>Winter Split<br>(%) |
| \$0.0             | 5 \$14.87                    | 10%                                                         | \$33.12                                         | 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100%                                           | \$18.80                                         | 50%                                            | 50%                                            |



Tables 2 and 3 show the years that programs have been in operation, the count of participants, the number of measures installed, and the programs' financial metrics through program year 2023. The programs are organized by sector. Within each sector, they are further organized starting with those in the oldest phases at the top and alphabetically. The residential programs cumulatively reached more customers and installed more measures than the income and age qualifying and non-residential programs. While the non-residential programs had the lowest number of customers, their spending per participant is considerably greater than the other sectors. This is reasonable given that non-residential customers tend to be much larger and have larger measures and projects than residential customers.

Table 2. Virginia summary program metrics - participation and financials of residential and income and age qualified programs (cumulative through December 31, 2023)<sup>7, 8, 9</sup>

|              |                                           | ion                     | Partic                      | ipation                     |                       |                                         | Financia     |                            |                                 |
|--------------|-------------------------------------------|-------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------------------|--------------|----------------------------|---------------------------------|
| DSM<br>phase | Program                                   | Program operat<br>years | Participants<br>(in 1,000s) | No. measures<br>(in 1,000s) | Expenditures<br>(\$M) | Administrative<br>expenditures<br>(\$M) | Budget (\$M) | Spending as %<br>of budget | Program cost<br>per participant |
|              | Appliance Recycling                       | 5                       | 6.56                        | 6.56                        | \$2.37                | \$0.12                                  | \$8.32       | 28%                        | \$361                           |
| VII          | Efficient Products Marketplace            | 5                       | 14,829                      | 14,829                      | \$35                  | \$1.67                                  | \$41         | 86%                        | \$2.38                          |
|              | Home Energy Assessment                    | 5                       | 23                          | 1,225                       | \$20                  | \$0.97                                  | \$21         | 92%                        | \$842                           |
|              | Customer Engagement                       | 4                       | 256                         | 256                         | \$5.08                | \$0.25                                  | \$5.64       | 90%                        | \$20                            |
|              | EV Energy Efficiency and Demand Response  | 4                       | 0.64                        | 0.64                        | \$0.66                | \$0.03                                  | \$1.19       | 55%                        | \$1,031                         |
|              | Home Retrofit                             | 4                       | 0.19                        | 0.64                        | \$2.68                | \$0.14                                  | \$5.32       | 50%                        | \$13,883                        |
| VIII         | Kits                                      | 4                       | 86                          | 156                         | \$3.95                | \$0.21                                  | \$5.78       | 68%                        | \$46                            |
| VIII         | Manufactured Housing                      | 4                       | 0.56                        | 0.84                        | \$2.02                | \$0.11                                  | \$4.69       | 43%                        | \$3,605                         |
|              | Multifamily                               | 4                       | 2.92                        | 13                          | \$2.20                | \$0.12                                  | \$6.19       | 36%                        | \$755                           |
|              | New Construction                          | 4                       | 6.50                        | 6.50                        | \$7.06                | \$0.38                                  | \$14         | 52%                        | \$1,085                         |
|              | Thermostat Purchase and WeatherSmart      | 4                       | 19                          | 18                          | \$5.82                | \$0.14                                  | \$3.60       | 81%                        | \$301                           |
|              | Smart Home                                | 3                       | 0.06                        | 0.29                        | \$1.32                | \$0.07                                  | \$4.38       | 30%                        | \$21,224                        |
| IX           | Virtual Energy Audit                      | 3                       | 10                          | 368                         | \$2.17                | \$0.13                                  | \$7.54       | 29% -                      | \$213                           |
|              | Water Savings                             | 3                       | 0.43                        | 0.43                        | \$0.61                | \$0.03                                  | \$1.88       | 33%                        | \$1,429                         |
| Reside       | ential programs, total                    |                         | 15,242                      | 16,881                      | \$91                  | \$4.37                                  | \$130        | 70%                        | \$5.95                          |
| VIII         | Residential IAQ HVAC Health and Safety    | 4                       | 11                          | 18                          | \$31                  | \$1.59                                  | \$33         | 95%                        | \$2,900                         |
| IX           | IAQ Solar                                 | 3                       | 0.14                        | 0.14                        | \$4.84                | \$0.32                                  | \$21         | 23%                        | \$35,330                        |
| IA           | Residential IAQ Energy Efficiency         | 3                       | 9.88                        | 55                          | \$14                  | \$0.79                                  | \$15         | 95%                        | \$1,413                         |
| х            | Residential IAQ Home Improvement Enhanced | 1                       | 0.003                       | 0.004                       | \$0.57                | \$0.04                                  | \$1.29       | 44%                        | \$188,703                       |
| Incom        | e and Age Qualifying programs, total      | -                       | 21                          | 73                          | \$50                  | \$2.74                                  | \$69         | 73%                        | \$2.432                         |

<sup>7</sup> Participants represent enrollees from program start through December 31, 2023, in thousands of participants. Participation in the Residential Appliance Recycling Program is measured by units recycled. Participation in the Residential Efficient Products Marketplace Program is measured by incentivized unit, i.e., lamp, fixture, or appliance. Participation in the EV Energy Efficiency and Demand Response Program is measured in units of EV chargers. Participation in the Thermostat Purchase and WeatherSmart program is measured by thermostats purchased and households with controlled thermostats, respectively.

<sup>&</sup>lt;sup>8</sup> The number of measures represents the quantity of measures installed, serviced, or implemented at the units for which incentives are issued from program start through December 31, 2023 in thousands.

<sup>&</sup>lt;sup>9</sup> Expenditures are from program start through December 31, 2023 and include O&M, capital spending, and common costs. O&M spending components include direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported here do not include the Company's margins.

## Table 3. Virginia summary program metrics - participation and financials of non-residential programs (cumulative through December 31, 2023)<sup>10</sup>

|              |                                      | tion                   | Partic                      | ipation                     |                       | 12 14                                   | Financia     | 1                          | No.                             |
|--------------|--------------------------------------|------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------------------|--------------|----------------------------|---------------------------------|
| DSM<br>phase | Program                              | Program opera<br>years | Participants<br>(in 1,000s) | No. measures<br>(in 1,000s) | Expenditures<br>(\$M) | Administrative<br>expenditures<br>(\$M) | Budget (\$M) | Spending as %<br>of budget | Program cost<br>per participant |
| VII          | Heating and Cooling Efficiency       | 5                      | 0.15                        | 2.36                        | \$5.81                | \$0.33                                  | \$8.72       | 67%                        | \$38,493                        |
| VII          | Lighting Systems & Controls          | 5                      | 1.06                        | 155                         | \$12                  | \$0.60                                  | \$9.00       | 136%                       | \$11,631                        |
| х            | Lighting Systems & Controls          | 1                      | 0.26                        | 37                          | \$3.32                | \$0.22                                  | \$9.72       | 34%                        | \$12,804                        |
|              | Office                               | 5                      | 0.17                        | 1.71                        | \$3.23                | \$0.17                                  | \$5.48       | 59%                        | \$19,363                        |
| VII          | Manufacturing                        | 5                      | 0.06                        | 0.39                        | \$2.84                | \$0.15                                  | \$5.85       | 49%                        | \$45,864                        |
|              | Window Film                          | 5                      | 0.09                        | 126                         | \$1.40                | \$0.07                                  | \$2.07       | 68%                        | \$15,588                        |
|              | Midstream Energy Efficiency Products | 4                      | 0.20                        | 2.23                        | \$2.10                | \$0.11                                  | \$5.67       | 37%                        | \$10,331                        |
| VIII         | Multifamily                          | 4                      | 0.03                        | 2.39                        | \$0.71                | \$0.04                                  | \$1.39       | 51%                        | \$21,018                        |
| VIII         | New Construction                     | 4                      | 0.01                        | 0.03                        | \$3.35                | \$0.20                                  | \$5.15       | 65%                        | \$418,837                       |
|              | Small Business Improvement Enhanced  | 4                      | 1.85                        | 30                          | \$11                  | \$0.59                                  | \$11         | 99%                        | \$5,879                         |
|              | Agricultural Energy Efficiency       | 3                      | 0.01                        | 19                          | \$1.38                | \$0.08                                  | \$1.77       | 78%                        | \$125,183                       |
|              | Building Automation System           | 3                      | 0                           | 0                           | \$0.79                | \$0.04                                  | \$1.84       | 43%                        | N/A                             |
| IX           | Building Optimization                | 3                      | 0.05                        | 1.15                        | \$1.76                | \$0.11                                  | \$2.12       | 83%                        | \$39,185                        |
|              | Engagement                           | 3                      | 0                           | 0                           | \$1.16                | \$0.06                                  | \$2.99       | 39%                        | N/A                             |
|              | Prescriptive Enhanced                | 3                      | 0.96                        | 44                          | \$16                  | \$0.92                                  | \$8.25       | 192%                       | \$16,450                        |
| Non-Re       | sidential programs, total            |                        | 4.89                        | 421                         | \$67                  | \$3.70                                  | \$81         | 83%                        | \$13,654                        |
| All pro      | grams, total                         |                        | 15,268                      | 17,375                      | \$208                 | \$11                                    | \$281        | 74%                        | \$14                            |

<sup>10</sup> Participants represent enrollees from program start through December 31, 2023, in thousands of participants. Participation in the Midstream Energy Efficiency Products program is measured by the number of invoices submitted to the Company for rebate.



Tables 4 and 5 show the forward-looking B/C ratios for the active programs. Dominion Energy calculated these ratios using savings and participation data through 2023 from DNV.

| Table 4. Virginia summary program metrics - B/C ratios of residential and income and age qualified |
|----------------------------------------------------------------------------------------------------|
| programs (cumulative through December 31, 2023) <sup>11</sup>                                      |

| DSM    |                                           | B           | enefit cost | ratios |      | Filing |
|--------|-------------------------------------------|-------------|-------------|--------|------|--------|
| phase  | Program                                   | Participant | Utility     | TRC    | RIM  | year   |
| Resid  | ential (energy efficiency)                |             |             |        |      |        |
|        | Appliance Recycling                       | 19.22       | 0.98        | 0.90   | 0.22 | 2023   |
| VII    | Efficient Products Marketplace            | ++          | 15.83       | 18.74  | 0.27 | 2023   |
|        | Home Energy Assessment                    | 25.06       | 8.46        | 5.94   | 0.35 | 2023   |
|        | Customer Engagement                       | 12.87       | 1.80        | 1.41   | 0.40 | 2023   |
|        | EV Energy Efficiency and Demand Response  | 0.57        | 0.15        | 0.08   | 0.10 | 2024   |
|        | Home Retrofit                             | 7.05        | 2.48        | 1.92   | 0.44 | 2023   |
|        | Kits                                      | ++          | 0.74        | 3.34   | 0.20 | 2024   |
| VIII   | Manufactured Housing                      | 1.08        | 0.11        | 0.10   | 0.09 | 2024   |
|        | Multifamily                               | 1.17        | 0.65        | 0.34   | 0.29 | 2024   |
|        | New Construction                          | 5.62        | 4.42        | 2.61   | 0.46 | 2024   |
|        | Thermostat Purchase and WeatherSmart      | 6.00        | 2.28        | 1.59   | 0.39 | 2024   |
|        | Smart Home                                | 1.30        | 0.41        | 0.25   | 0.18 | 2024   |
| IX     | Virtual Energy Audit                      | 38.26       | 4.11        | 7.97   | 0.26 | 2024   |
|        | Water Savings                             | 4.13        | 1.35        | 1.16   | 0.30 | 2024   |
| Reside | ential (demand response)                  |             |             |        |      |        |
|        | Smart Thermostat Rewards                  | 9.37        | 0.67        | 2.61   | 0.46 | 2024   |
| VIII   | EV Rewards                                | 22.64       | 0.23        | 0.33   | 0.22 | 2024   |
| IX     | Water Savings Demand Response             | 4.99        | 1.79        | 1.60   | 0.33 | 2020   |
| Incom  | e and Age Qualifying (energy efficiency)  |             |             |        |      |        |
| VIII   | IAQ HVAC Health and Safety                | 2.34        | 0.29        | 0.37   | 0.18 | 2023   |
| 194    | IAQ Solar                                 | ++          | 0.38        | 0.38   | 0.22 | 2024   |
| IX     | Residential IAQ Energy Efficiency         | ++          | 0.73        | 0.73   | 0.27 | 2023   |
| X      | Residential IAQ Home Improvement Enhanced | 55.72       | 0.03        | 0.03   | 0.03 | 2021   |

<sup>11</sup> B/C ratios are forward-looking and incorporate 2023 EM&V results. Programs that closed to enrollment in 2023 include Appliance Recycling, Efficient Products Marketplace, Home Energy Assessment, and Customer Engagement; their B/C ratios were not updated. Additionally, the Water Savings Demand Response program had no participants through year-end 2023 and does not have an updated B/C ratio. Appendices J and K provide a complete list of each program's B/C ratios since the initial program filing.



Table 5. Virginia summary program metrics - B/C ratios of non-residential programs (cumulative through December 31, 2023)<sup>12</sup>

| DSM    | Brogram                              | B           | enefit cost | ratios | -    | Filing |
|--------|--------------------------------------|-------------|-------------|--------|------|--------|
| phase  | Program                              | Participant | Utility     | TRC    | RIM  | year   |
| Non-R  | esidential (energy efficiency)       |             | 1.00        |        | -    |        |
| VII    | Heating and Cooling Efficiency       | 18.92       | 39.23       | 18.27  | 1.14 | 2023   |
| VII    | Lighting Systems & Controls          | 29.77       | 11.09       | 9.12   | 0.56 | 2022   |
| Х      | Lighting Systems & Controls          | 9.90        | 14.55       | 6.42   | 0.66 | 2024   |
|        | Office                               | 10.55       | 1.46        | 1.56   | 0.30 | 2023   |
| VII    | Manufacturing                        | 20.59       | 6.16        | 5.76   | 0.48 | 2023   |
|        | Window Film                          | 2.97        | 0.80        | 0.59   | 0.32 | 2023   |
|        | Midstream Energy Efficiency Products | 2.23        | 4.54        | 1.97   | 0.90 | 2024   |
| VIII   | Multifamily                          | 4.48        | 2.12        | 1.69   | 0.48 | 2024   |
| VIII   | New Construction                     | 10.7        | 4.8         | 4.7    | 0.6  | 2024   |
|        | Small Business Improvement Enhanced  | 3.28        | 1.44        | 1.16   | 0.42 | 2024   |
|        | Agricultural Energy Efficiency       | 7.68        | 3.05        | 2.40   | 0.61 | 2024   |
|        | Building Automation System           | 7.91        | 5.83        | 4.92   | 1.27 | 2020   |
| IX     | Building Optimization                | 9.82        | 4.76        | 4.31   | 0.76 | 2024   |
|        | Engagement                           | ++          | 1.90        | 3.07   | 0.85 | 2020   |
|        | Prescriptive Enhanced                | 4.88        | 2.21        | 2.21   | 0.62 | 2023   |
| Non-Re | esidential (demand response)         | the start   |             |        |      |        |
| Ш      | Distributed Generation               | ++          | 0.58        | 1.64   | 0.55 | 2024   |

<sup>12</sup> B/C ratios are forward-looking and incorporate the results from this EM&V report. B/C ratios for the Non-Residential Building Automation and Non-Residential Engagement programs were not updated because there was no enrollment through 2023. Appendices J and K provide a complete list of each program's B/C ratios since the initial program filing.



Tables 6 and 7 show program gross and net savings in annualized energy savings, cumulative savings to date, lifetime savings based on participation through year-end 2023, and summer peak demand reductions. The residential sector represented the majority of energy savings through 2023, particularly cumulative energy savings. This is due largely to the success of the Residential Efficient Products Marketplace program and the lighting measures offered through the program. While the savings from the income and age qualifying programs are the lowest of the three sectors, those programs serve a hard-to-reach segment of the population. The program is designed to not only produce energy savings, but to also address various health and safety measures requiring attention before energy efficiency measures can be implemented (e.g., repairing walls or doors).

## Table 6. Virginia summary program metrics - energy impacts of residential and income and age qualified programs (cumulative through December 31, 2023)

|              |                                           | Energy impacts                                    |                                          |                                        |                                                   |                                                 |                                        |                                      |                                                 |  |
|--------------|-------------------------------------------|---------------------------------------------------|------------------------------------------|----------------------------------------|---------------------------------------------------|-------------------------------------------------|----------------------------------------|--------------------------------------|-------------------------------------------------|--|
| ð            | 14                                        |                                                   | Gr                                       | oss                                    |                                                   |                                                 | 1                                      | Net                                  |                                                 |  |
| DSM<br>phase | Program                                   | Total annualized gross energy<br>savings (MWh/yr) | Cumulative gross energy<br>savings (MWh) | Lifetime gross energy savings<br>(MWh) | Total summer gross peak<br>demand reductions (MW) | Total annualized net energy<br>savings (MWh/yr) | Cumulative net energy<br>savings (MWh) | Lifetime net energy savings<br>(NWN) | Total summer net peak<br>demand reductions (MW) |  |
|              | Appliance Recycling                       | 4,580                                             | 11,304                                   | 36,653                                 | 0.69                                              | 2,748                                           | 6,782                                  | 21,992                               | 0.41                                            |  |
| VII          | Efficient Products Marketplace            | 446,246                                           | 1,184,524                                | 7,403,792                              | 41                                                | 253,744                                         | 711,593                                | 4,210,248                            | 23                                              |  |
|              | Home Energy Assessment                    | 45,311                                            | 96,677                                   | 566,515                                | 3.41                                              | 13,389                                          | 25,907                                 | 167,404                              | 1.05                                            |  |
|              | Customer Engagement                       | 114,261                                           | 107,157                                  | 115,394                                | 0                                                 | 15,635                                          | 14,422                                 | 15,822                               | 0                                               |  |
|              | EV Energy Efficiency and Demand Response  | 83                                                | 85                                       | 830                                    | 0                                                 | 66                                              | 68                                     | 664                                  | 0                                               |  |
|              | Home Retrofit                             | 442                                               | 677                                      | 10,166                                 | 0.13                                              | 398                                             | 609                                    | 9,149                                | 0.11                                            |  |
| VIII         | Kits                                      | 10,604                                            | 14,238                                   | 60,843                                 | 0.93                                              | 6,363                                           | 8,543                                  | 36,506                               | 0.56                                            |  |
| VIII         | Manufactured Housing                      | 120                                               | 50                                       | 655                                    | 0.04                                              | 108                                             | 45                                     | 590                                  | 0.04                                            |  |
|              | Multifamily                               | 661                                               | 704                                      | 5,572                                  | 0.12                                              | 595                                             | 633                                    | 5,015                                | 0.11                                            |  |
|              | New Construction                          | 14,430                                            | 15,864                                   | 360,787                                | 6.17                                              | 12,554                                          | 13,802                                 | 313,884                              | 5.37                                            |  |
|              | Thermostat Purchase and WeatherSmart      | 4,745                                             | 6,540                                    | 29,059                                 | 1.09                                              | 3,955                                           | 5,366                                  | 23,406                               | 1.03                                            |  |
|              | Smart Home                                | 31                                                | 18                                       | 193                                    | 0.002                                             | 26                                              | 15                                     | 164                                  | 0.001                                           |  |
| IX           | Virtual Energy Audit                      | 7,933                                             | 4,885                                    | 81,121                                 | 0.74                                              | 4,760                                           | 2,931                                  | 48,673                               | 0.44                                            |  |
|              | Water Savings                             | 611                                               | 365                                      | 6,980                                  | 0.10                                              | 550                                             | 329                                    | 6,282                                | 0.09                                            |  |
| Reside       | ential programs, total                    | 650,059                                           | 1,443,089                                | 8,678,560                              | 55                                                | 314,891                                         | 791,046                                | 4,859,800                            | 33                                              |  |
| VIII         | IAQ HVAC Health and Safety                | 3,137                                             | 4,760                                    | 42,378                                 | 0.54                                              | 2,509                                           | 3,808                                  | 33,902                               | 0.43                                            |  |
| IV           | IAQ Solar                                 | 857                                               | 394                                      | 21,438                                 | 0.31                                              | 686                                             | 315                                    | 17,151                               | 0.25                                            |  |
| IX           | Residential IAQ Energy Efficiency         | 7,186                                             | 5,639                                    | 155,089                                | 1.83                                              | 5,749                                           | 4,511                                  | 124,071                              | 1.46                                            |  |
| X            | Residential IAQ Home Improvement Enhanced | 1.66                                              | 0.27                                     | 33                                     | 0.001                                             | 1.64                                            | 0.27                                   | 33                                   | 0.001                                           |  |
| Incom        | e and Age Qualifying programs, total      | 11,182                                            | 10,793                                   | 218,938                                | 2.67                                              | 8,946                                           | 8,635                                  | 175,157                              | 2.14                                            |  |
|              |                                           | 1                                                 |                                          | /                                      |                                                   |                                                 | -                                      |                                      |                                                 |  |

kWh

# Table 7. Virginia summary program metrics - energy impacts of non-residential programs (cumulative through December 31, 2023)

|                                 |                                      | Energy impacts                                    |                                          |                                        |                                                   |                                                 |                                        |                                      |                                                 |  |
|---------------------------------|--------------------------------------|---------------------------------------------------|------------------------------------------|----------------------------------------|---------------------------------------------------|-------------------------------------------------|----------------------------------------|--------------------------------------|-------------------------------------------------|--|
|                                 |                                      |                                                   | G                                        | ross                                   |                                                   | Net                                             |                                        |                                      |                                                 |  |
| DSM<br>phase                    | Program                              | Total annualized gross energy<br>savings (MWh/yr) | Cumulative gross energy<br>savings (MWh) | Lifetime gross energy savings<br>(MWh) | Total summer gross peak<br>demand reductions (MW) | Total annualized net energy<br>savings (MWh/yr) | Cumulative net energy savings<br>(MWh) | Lifetime net energy savings<br>(MWh) | Total summer net peak<br>demand reductions (MW) |  |
| VII                             | Heating and Cooling Efficiency       | 29,529                                            | 28,613                                   | 442,967                                | 5.51                                              | 20,670                                          | 20,029                                 | 310,077                              | 3.85                                            |  |
|                                 | Lighting Systems & Controls          | 81,064                                            | 192,418                                  | 825,218                                | 12                                                | 44,144                                          | 106,339                                | 449,395                              | 5.53                                            |  |
| х                               | Lighting Systems & Controls          | 20,831                                            | 4,305                                    | 211,840                                | 3.48                                              | 18,748                                          | 3,875                                  | 190,656                              | 3.13                                            |  |
|                                 | Office                               | 12,633                                            | 11,745                                   | 88,456                                 | 0.09                                              | 11,370                                          | 10,571                                 | 79,611                               | 0.08                                            |  |
| VII                             | Manufacturing                        | 12,691                                            | 10,445                                   | 156,555                                | 1.53                                              | 11,422                                          | 9,400                                  | 140,899                              | 1.38                                            |  |
|                                 | Window Film                          | 584                                               | 1,374                                    | 5,838                                  | 0.08                                              | 467                                             | 1,099                                  | 4,670                                | 0.06                                            |  |
|                                 | Midstream Energy Efficiency Products | 3,910                                             | 3,415                                    | 70,235                                 | 2.66                                              | 3,519                                           | 3,073                                  | 63,211                               | 2.39                                            |  |
| VIII                            | Multifamily                          | 377                                               | 229                                      | 3,232                                  | 0.02                                              | 340                                             | 206                                    | 2,909                                | 0.02                                            |  |
| viii                            | New Construction                     | 28,750                                            | 11,099                                   | 431,362                                | 3.22                                              | 25,875                                          | 9,989                                  | 388,226                              | 2.89                                            |  |
|                                 | Small Business Improvement Enhanced  | 12,711                                            | 16,174                                   | 129,484                                | 2.72                                              | 10,604                                          | 13,932                                 | 108,041                              | 2.14                                            |  |
|                                 | Agricultural Energy Efficiency       | 5,896                                             | 5,776                                    | 64,998                                 | 0.85                                              | 5,720                                           | 5,603                                  | 63,048                               | 0.82                                            |  |
|                                 | Building Automation System           | 0                                                 | 0                                        | 0                                      | 0                                                 | 0                                               | 0                                      | 0                                    | 0                                               |  |
| IX                              | Building Optimization                | 15,657                                            | 8,600                                    | 78,965                                 | 0.36                                              | 14,091                                          | 7,740                                  | 71,069                               | 0.33                                            |  |
|                                 | Engagement                           | 0                                                 | 0                                        | 0                                      | 0                                                 | 0                                               | 0                                      | 0                                    | 0                                               |  |
|                                 | Prescriptive Enhanced                | 23,199                                            | 20,751                                   | 150,914                                | 20                                                | 20,879                                          | 18,676                                 | 135,822                              | 18.29                                           |  |
| Non-Residential programs, total |                                      | 247,832                                           | 314,945                                  | 2,660,064                              | 53                                                | 187,848                                         | 210,533                                | 2,007,635                            | 41                                              |  |
| All programs, total             |                                      | 909,073                                           | 1,768,827                                | 11,557,562                             | 110                                               | 511,685                                         | 1,010,214                              | 7,042,592                            | 76                                              |  |



Tables 8 and 9 show the annualized non-energy impacts in terms of customer bill savings; avoided carbon emissions; operations and maintenance non-energy impacts for HVAC, lighting, and motor measures; and water savings.

Table 8. Virginia summary program metrics - other impacts of residential and income and age qualified programs (cumulative through December 31, 2023)

| DSM<br>phase | Program                                   | Bill savings<br>(\$M/year) | Carbon emissions<br>avoided<br>(metric tons<br>CO <sub>2</sub> /yr) | O&M NEIs<br>(\$M/year) | Water savings<br>(Mgal/year) |
|--------------|-------------------------------------------|----------------------------|---------------------------------------------------------------------|------------------------|------------------------------|
|              | Appliance Recycling                       | \$0.12                     | 2,608                                                               | N/A                    | N/A                          |
| VII          | Efficient Products Marketplace            | \$0.32                     | 257,591                                                             | N/A                    | 44                           |
|              | Home Energy Assessment                    | \$0.63                     | 25,772                                                              | \$2.18                 | 3.49                         |
|              | Customer Engagement                       | \$4.02                     | 64,449                                                              | N/A                    | N/A                          |
|              | EV Energy Efficiency and Demand Response  | \$0.01                     | 47                                                                  | N/A                    | N/A                          |
|              | Home Retrofit                             | \$0.01                     | 250                                                                 | \$0                    | 0.01                         |
| VIII         | Kits                                      | \$0.46                     | 6,293                                                               | \$0.06                 | 3.31                         |
| VIII         | Manufactured Housing                      | \$0.01                     | 68                                                                  | \$0.01                 | 0.06                         |
|              | Multifamily                               | \$0.03                     | 374                                                                 | \$0.06                 | N/A                          |
|              | New Construction                          | \$0.92                     | 8,261                                                               | N/A                    | N/A                          |
|              | Thermostat Purchase and WeatherSmart      | \$0.17                     | 2,775                                                               | N/A                    | N/A                          |
|              | Smart Home                                | \$0.002                    | 18                                                                  | \$0.0002               | N/A                          |
| IX           | Virtual Energy Audit                      | \$0.72                     | 4,712                                                               | \$1.94                 | 34                           |
|              | Water Savings                             | \$0.06                     | 356                                                                 | N/A                    | N/A                          |
| Reside       | ntial programs, total                     | \$7.48                     | 373,572                                                             | \$4.25                 | 85                           |
| VIII         | IAQ HVAC Health and Safety                | \$0.10                     | 1,769                                                               | -\$0.01                | N/A                          |
| IV           | IAQ Solar                                 | \$0.10                     | 497                                                                 | N/A                    | N/A                          |
| IX           | Residential IAQ Energy Efficiency         | \$0.50                     | 4,115                                                               | \$0.03                 | 4.07                         |
| X            | Residential IAQ Home Improvement Enhanced | N/A                        | 0.95                                                                | N/A                    | N/A                          |
| Income       | and Age Qualifying programs, total        | \$0.70                     | 6,383                                                               | \$0.03                 | 4.07                         |

# Table 9. Virginia summary program metrics - other impacts of non-residential programs (cumulative through December 31, 2023)

| DSM<br>phase | Program                              | Bill savings<br>(\$M/year) | Carbon emissions<br>avoided<br>(metric tons<br>CO <sub>2</sub> /yr) | O&M NEIs<br>(\$M/year) | Water savings<br>(Mgal/year) |
|--------------|--------------------------------------|----------------------------|---------------------------------------------------------------------|------------------------|------------------------------|
| VII          | Heating and Cooling Efficiency       | \$0.85                     | 16,737                                                              | -\$0.27                | N/A                          |
| VII          | Lighting Systems & Controls          | \$1.13                     | 47,197                                                              | -\$0.12                | N/A                          |
| Х            | Lighting Systems & Controls          | \$2.14                     | 12,232                                                              | \$0.25                 | N/A                          |
|              | Office                               | \$0.63                     | 7,137                                                               | N/A                    | N/A                          |
| VII          | Manufacturing                        | \$0.67                     | 7,402                                                               | N/A                    | N/A                          |
|              | Window Film                          | \$0.01                     | 345                                                                 | N/A                    | N/A                          |
|              | Midstream Energy Efficiency Products | N/A                        | 2,240                                                               | -\$0.13                | 3.25                         |
| VIII         | Multifamily                          | \$0.03                     | 214                                                                 | -\$0.02                | N/A                          |
| VIII         | New Construction                     | \$1.74                     | 16,165                                                              | N/A                    | N/A                          |
|              | Small Business Improvement Enhanced  | \$0.60                     | 8,405.54                                                            | \$0.07                 | N/A                          |
|              | Agricultural Energy Efficiency       | \$0.10                     | 3,358                                                               | \$0.005                | N/A                          |
|              | Building Automation System           | N/A                        | N/A                                                                 | N/A                    | N/A                          |
| IX           | Building Optimization                | \$0.75                     | 8,755                                                               | N/A                    | N/A                          |
|              | Engagement                           | N/A                        | N/A                                                                 | N/A                    | N/A                          |
|              | Prescriptive Enhanced                | \$1.51                     | 13,416                                                              | N/A                    | N/A                          |
| Non-Re       | sidential programs, total            | \$10                       | 143,604                                                             | -\$0.22                | 3.25                         |
| All pro      | grams, total                         | \$18                       | 523,559                                                             | \$4.06                 | 92                           |



# Summary of energy efficiency programs

This section summarizes the Company's energy efficiency program activity through 2023 in Virginia and North Carolina.

## A shift away from lighting

Importantly, 2023 was the first program year that the Company removed various lighting measures from its residential programs.<sup>15</sup> This change occurred due to rules created in the Energy Independence and Security Act of 2007 (EISA) that took effect in January 2023. Similar shifts away from lighting measures are occurring in portfolios across the country, and Dominion Energy has been preparing for years to mitigate the effects of this change by growing and diversifying its programs.

As the graphics in this section show, the removal of EISA-compliant lighting measures had a notable effect on residential savings in both Virginia and North Carolina in 2023. From the start of the Phase I programs in 2010, lighting dominated the savings landscape, but in 2023 we see a different set of highsavings programs and measures begin to emerge in both states.

2023 was the first full year of the Company's broader customer awareness campaign. Given that the lead time between customer awareness, project implementation, and rebate approval may be many months, this report, which covers 2023 program activities, likely does not capture the full impacts of the awareness campaign.

## High-saving programs in 2023 -Virginia

Figure 2 shows the percentage of installed net annualized energy savings in 2023 by energy efficiency program in Virginia. More than threequarters of the 2023 net savings resulted from the non-residential programs while roughly one-fifth were from the residential programs.

Figure 2. Percentage of installed net annualized energy savings across the Virginia energy efficiency program portfolio in 2023



<sup>15</sup> Non-residential lighting remained mostly unaffected by EISA in 2023 and continued to contribute a substantial portion of the portfolio's savings. While some residential lighting measures still received rebates in 2023, they contributed significantly less incremental savings. In Virginia, three programs stand out for their high savings contributions to the portfolio: Non-Residential New Construction (19% of new incremental annualized net savings), Non-Residential Lighting Systems & Controls (18%), and Non-Residential Prescriptive Enhanced (10%).

After two years of implementation, the Non-Residential New Construction Program began to report participation and savings in 2023 with a large data center project and several similar projects in its pipeline. This program inherently requires long lead times to recruit building designers, identify measures, complete construction, and verify measure installation.

The Company has offered a Lighting Systems & Controls program in various forms and phases since DSM Phase I in 2010, and it has consistently been a high energy savings program.

The Company has also offered various forms of the multi-measure Non-Residential Prescriptive Enhanced

program since DSM Phase II in 2012. It began as the Non-Residential Energy Audit program, transitioned in Phase VI to the Non-Residential Prescriptive program, and is now the Non-Residential Prescriptive Enhanced program. Notably, many of the measures from the closing Phase VII non-residential programs will be bundled into the Prescriptive Enhanced Bundle program starting in 2024.

## High-saving programs in 2023 -North Carolina

Figure 3 shows the percentage of installed net annualized energy savings in 2023 by energy efficiency program in North Carolina. Similar to Virginia, the non-residential sector contributed more than four-fifths of net savings, particularly the Small Business Improvement Enhanced program (41%). Consistent with past years and with trends in Virginia, the Non-Residential Lighting Systems & Controls Program is the next largest contributor, with 27% of new net total savings.



Figure 3. Percentage of installed net annualized energy savings across the North Carolina energy efficiency program portfolio in 2023

# Phase VIII programs are closing and bundling measures

Residential Efficient Products Marketplace, Non-Residential Lighting Systems & Controls, and Residential Home Energy Assessment programs Dominion Energy closed the Phase VII programs at the end of 2023 after being open for four full years. The energy savings from this phase of programs came primarily from lighting measures installed through the Residential Efficient Products Marketplace, Non-Residential Lighting Systems & Controls, and Residential Home Energy Assessment programs. Apart from the EISA-compliant residential lighting measures and the measures that the now closed Residential Appliance Recycling Program had offered, the measures that were available in these Phase VII programs will continue to be available in other new and existing programs.<sup>13</sup>

## Non-Residential Small Manufacturing Program, Cooling and Heating Efficiency, Window Film, and Office programs

The Non-Residential Small Manufacturing, Cooling and Heating Efficiency, Window Film, Office, and Residential Appliance Recycling programs trended much lower than planned in participation and savings in their initial program years. To streamline these program offerings, the Company decided to bundle the Manufacturing, Cooling and Heating Efficiency, and Window Film programs under the Phase IX Non-Residential Enhanced Prescriptive program and closed the Office and Residential Appliance Recycling programs. In 2024, the measures formally offered by the Office program will continue to be available to non-residential customers under the Phase IX Building Optimization program.

This bundling approach allows the Company to continue to offer these programs' measures to customers while also reducing the costs of operating stand-alone programs that may be better combined.<sup>14</sup>

## Residential Appliance Recycling program

Dominion Energy offered the Residential Appliance Recycling program in partnership with different implementation vendors and appliance pickup contractors over many years, beginning in

<sup>13</sup> All three programs underwent program evaluations during their lifecycle. The Residential Efficient Products Marketplace program was evaluated twice for gross and net impacts; the Non-Residential Lighting Systems & Controls program was evaluated for gross and net impacts, baseline, and measure persistence; and the Residential Home Energy Assessment program was evaluated for gross and net impacts. The studies were published under SCC Case No. PUR-2021-00247.

<sup>14</sup> SCC Case No. PUR-2022-00210. <u>https://scc.virginia.gov/docketsearch#/caseDetails/143710</u>. Accessed April 3, 2023.



Phase IV. However, while the program saw steady enrollment when it was operating smoothly, it was often plagued by disruptions to service. These disruptions originated from unexpected economic hardships for the contractors or supply chain-related setbacks such as labor and truck shortages. While the Company attempted to solicit new bids for this type of appliance recycling program in future phases, it received no bids. Therefore, the appliance recycling measures that this program offered will be discontinued for the foreseeable future.

# Impact of Covid-19 and legislative changes on Phase VII programs

The past several years brought many significant and unexpected changes to the economy and regulations that affected these programs. The programs were designed and filed in 2018, assuming 5-year implementation in a pre-pandemic economy, and under a regulatory framework that restricted large customers (with greater than 500 kW) from participating in them.<sup>15</sup> Just as the programs were launching, in early 2020, the COVID-19 pandemic forced them to pause and then readjust operations with limited in-person contact. In later 2021, under the VCEA, the non-residential programs were opened to larger customers.

Despite these major events, the Phase VII programs combined spent \$85M or roughly 80% of planned expenditures through the end of 2023. Participation in the same programs was more than 130% of planned through the end of 2023, and net annualized savings were 372 GWh/year, or roughly 74% of planned net energy savings. This is an achievement given the challenges these programs had to face and the resulting adjustments in program delivery they had to make.

# Phase VIII programs continue to ramp up

## Navigating the post-covid economy

The Phase VIII programs launched in spring 2021 and have been running for two to three years. These programs were also designed and filed prior to the pandemic and approved in 2020. The two new construction programs targeted at the residential and non-residential sectors have thus far contributed the most savings of the programs in this phase.<sup>16</sup>

<sup>&</sup>lt;sup>16</sup> The Residential New Construction baseline was studied recently, as published in SCC Case No. PUR-2021-00247.



<sup>&</sup>lt;sup>15</sup> The Grid Transformation and Security Act, Code of Virginia. Chapter 296. Section § 56-585.1. A.5. c. Approved March 9, 2018. <u>https://lis.virginia.gov/cgi-bin/legp604.exe?181+ful+CHAP0296</u>

# Small Business Improvement Enhanced program

The Small Business Improvement Enhanced program is a well-established program that has existed since the Phase V Small Business Improvement program (launched in 2016). While it has enrolled almost all its planned number of participants, the net savings are less than half of what the program had planned to realize. The program derives most of its energy savings from lighting measures, which were evaluated in the Non-Residential lighting study. As a program improvement to increase participation and savings, the Company asked the Commission (in Case No. PUR-2023-00217) to expand program eligibility to customers with greater than five subsidiaries and is awaiting the Commission's decision as of this report.

## Targeted programs: Residential Manufactured Housing, Multifamily, Retrofit, and Electric Vehicle Energy Efficiency, and Non-Residential Midstream Energy Efficiency

The programs in Phase VIII that target specific segments of the population (Residential Manufactured Housing, Multifamily, Retrofit, Electric Vehicle Energy Efficiency, and Non-Residential Midstream Energy Efficiency) continued to see lower-than-planned participation and net new energy savings in 2023. However, they are growing more than in prior years.

In the 2022 EM&V report, the Manufactured Housing and Retrofit programs reported a lack of a strong network of Building Performance Institute (BPI)certified professionals. In 2024, the Retrofit program will be bundled with the closing Residential Home Energy Assessment Program.

The Electric Vehicle Energy Efficiency program has several customer enrollment restrictions that limit the eligible population to a subset of all EV owners (i.e., EV owners who purchased a new Level 2 charger recently).

## Residential Customer Engagement

The impact evaluation of Residential Customer Engagement found that the program, as implemented in 2021 and 2022, realized very little savings. This program will be extended with a new implementer in 2024.



# Phase IX programs experience both early successes and challenges

The SCC approved the Phase IX programs in the fall of 2021. By the end of 2023, many of these programs had exceeded their planned net savings goals including the Agricultural Program, the Non-Residential Building Optimization Program, and the Income and Age Qualifying Home Improvement Energy Efficiency Program (a continuation of a previous iteration of the program under Phase IV). Other programs like Income and Age Qualifying Solar and Non-Residential Automation and Engagement saw slower uptake than originally planned.

The Agricultural program was recently expanded to allow both residential and non-residential customers to participate. In 2024, the same measures in the Phase VII Office program will be available under the Building Optimization program.

In late 2023, the Company launched multiple marketing campaigns to drive customers to the Residential Virtual Audit program, which in 2023 led to participation levels that were quadruple the 2022 levels.

Like the Phase VIII programs targeting specific segments of the population, the Residential Smart Homes and Water Savings programs are still finding their niche in the market and ramping up.

The Income and Age Qualifying Solar program participation was lower than planned in 2023. One barrier to program growth is the strict siting requirements for projects to have optimal site conditions for solar energy production, such as a south-facing roof without signficant tree coverage. Fewer sites meet the required conditions than previously anticipated; in other instances, customers were not interested in following through with the installations.

The Non-Residential Automation and Engagement programs did not complete any projects in 2023 but established a pipeline of projects and participants. Similar to the Non-Residential New Construction program, both require long lead times before projects can be completed and participants can be counted. Building automation projects tend to be larger systems that take time to install and commission. Customer Engagement participants must be enrolled for at least one year before they can be counted as participants.

## Phase X programs are launching

Two of the Phase X programs approved by the SCC in late summer 2022, Non-Residential Lighting Systems & Controls and Residential Income and Age Qualifying Home Improvement, had participation in 2023. These two programs were continuations of programs offered in previous phases. Many of the other new programs are building their vendor networks (Non-Residential Data Center, Non-Residential Hotel and Lodging, Non-Residential Healthcare). Information technology systems delayed start-up for a few programs including Non-Residential Small Business Behavioral, and Residential Moderate to Low Income Targeted Reports.



## Annualized energy savings, participation, and program spending

Table 10 through Table 12 on the following pages show net annualized energy savings, participation, and program spending from the inception of active programs in Virginia and North Carolina.

In aggregate, the portfolio spent about three-fourths of its budget through 2023 in Virginia and slightly less than half of its budget in North Carolina.<sup>17</sup>

This spending resulted in the Virginia program achieving almost half of its planned net energy savings for 2023 and the North Carolina program attaining roughly one-fifth of planned net energy.

In Virginia, spending across the three sectors– residential, Income and Age Qualified (IAQ), and non-residential–ranged between 67% and 84% of planned. The residential sector led in the percentage of planned participation at 75% of planned compared to 44% of planned participation for the IAQ sector and only 22% for the non-residential sector. In terms of net energy savings achieved as a percentage of the plan across the three sectors, residential achieved 43% of planned, IAQ achieved 40%, and non-residential achieved 65%. Comparing the participation-level achievements with the energy savings achievements indicates that the residential participants are producing less realized net savings than planned, the IAQ participants are producing about the same per-participant level of savings as planned, and the non-residential participants are producing a much greater per-participant level of savings than planned.

In North Carolina, the IAQ sector leads in net energy savings compared to planning, exceeding plans at 101% though participation in the IAQ program is much lower than planned (3%). This indicates that the IAQ program realized savings per participant are greater than planned. The non-residential sector shows a similar trend; participation was less than 4% of planned, and net energy savings is 25% of planned. In the residential sector, participation was 12% of planned and net energy savings was 21%.

As in Virginia, spending in North Carolina across the three sectors ranged between 34% and 56% of planned spending.

More granular details of each program's performance by month appear in Appendix B, Appendix O, and Appendix P. Cumulative and lifetime participation, net energy savings, and net peak demand reduction indicators are provided in Appendix Q. The reported indicators support the Company's integrated resource planning process, lost revenue recovery calculations (if pursued), program incentives, and other calculations that rely on these metrics.

<sup>&</sup>lt;sup>17</sup> When reviewing the North Carolina results, please note that the overall system-level program budget is allocated relatively between Virginia and North Carolina, with about 94% of costs allocated to Virginia and the remaining 6% allocated to North Carolina.



Table 10. Annualized program progress for active residential Phases VII and VIII energy efficiency programs (cumulative from program start through December 31, 2023) in Virginia and North Carolina (active programs)<sup>18, 19, 20</sup>

|                         |           |                       | Virginia                          |                                                    |                       | North Caroli                      | ina                                                |
|-------------------------|-----------|-----------------------|-----------------------------------|----------------------------------------------------|-----------------------|-----------------------------------|----------------------------------------------------|
| Program                 | Metric    | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) |
| Phase VII               |           |                       |                                   |                                                    |                       |                                   |                                                    |
|                         | Actual    | \$2.37                | 6.56                              | 2,748                                              | \$0.08                | 0.04                              | 18                                                 |
| Appliance Recycling     | Planned   | \$8.32                | 41                                | 19,266                                             | \$0.45                | 2.28                              | 1,073                                              |
|                         | % of Plan | 28%                   | 16%                               | 14%                                                | 17%                   | 1.80%                             | 1.64%                                              |
| Efficient Decducto      | Actual    | \$35                  | 14,829                            | 253,744                                            | \$1.09                | 288                               | 4,824                                              |
| Efficient Products      | Planned   | \$41                  | 13,402                            | 374,827                                            | \$2.14                | 666                               | 19,261                                             |
| war ketplace            | % of Plan | 86%                   | 111%                              | 68%                                                | 51%                   | 43%                               | 25%                                                |
| Hanna Enamera           | Actual    | \$20                  | 23                                | 13,389                                             | \$0.44                | 0.08                              | 36                                                 |
| Home Energy             | Planned   | \$21                  | 137                               | 49,036                                             | \$1.19                | 8.03                              | 2,799                                              |
| Assessment              | % of Plan | 92%                   | 17%                               | 27%                                                | 37%                   | 0.93%                             | 1.28%                                              |
| Phase VIII              |           |                       |                                   |                                                    |                       |                                   |                                                    |
| Customer                | Actual    | \$5.08                | 806                               | 15,635                                             |                       |                                   |                                                    |
| Engagement              | Planned   | \$5.64                | 823                               | 138,298                                            |                       |                                   |                                                    |
| Lingagement             | % of Plan | 90%                   | 98%                               | 11%                                                |                       |                                   |                                                    |
| EV Energy Efficiency    | Actual    | \$0.66                | 0.64                              | 66                                                 |                       |                                   |                                                    |
| and Demand              | Planned   | \$1.19                | 2.44                              | 917                                                |                       |                                   |                                                    |
| Response                | % of Plan | 55%                   | 26%                               | 7.24%                                              |                       |                                   |                                                    |
|                         | Actual    | \$2.68                | 0.19                              | 398                                                | \$0.13                | 0                                 | 0                                                  |
| Home Retrofit           | Planned   | \$5.32                | 5.08                              | 9,874                                              | \$0.33                | 0.32                              | 630                                                |
|                         | % of Plan | 50%                   | 3.80%                             | 4.03%                                              | 41%                   | 0%                                | 0%                                                 |
|                         | Actual    | \$3.95                | 86                                | 6,363                                              | \$0.20                | 4.27                              | 313                                                |
| Kits                    | Planned   | \$5.78                | 85                                | 22,378                                             | \$0.36                | 5.40                              | 1,428                                              |
|                         | % of Plan | 68%                   | 102%                              | 28%                                                | 55%                   | 79%                               | 22%                                                |
| Manufactured            | Actual    | \$2.02                | 0.56                              | 108                                                |                       |                                   |                                                    |
| Housing                 | Planned   | \$4.69                | 5.60                              | 9,929                                              |                       |                                   |                                                    |
| nousing                 | % of Plan | 43%                   | 10%                               | 1%                                                 |                       |                                   |                                                    |
|                         | Actual    | \$2.20                | 2.92                              | 595                                                |                       |                                   |                                                    |
| Multifamily             | Planned   | \$6.19                | 37                                | 32,792                                             |                       |                                   |                                                    |
|                         | % of Plan | 36%                   | 8%                                | 2%                                                 |                       |                                   |                                                    |
|                         | Actual    | \$7.06                | 6.50                              | 12,554                                             |                       |                                   |                                                    |
| <b>New Construction</b> | Planned   | \$14                  | 14                                | 19,053                                             |                       |                                   |                                                    |
|                         | % of Plan | 52%                   | 48%                               | 66%                                                |                       |                                   |                                                    |
| Thomas dat Dunch        | Actual    | \$2.91                | 19                                | 3,955                                              | \$0.10                | 0.57                              | 143                                                |
| and Weather Smooth      | Planned   | \$3.60                | 23                                | 9,359                                              | \$0.22                | 1.44                              | 597                                                |
| and weather Shidft      | % of Plan | 81%                   | 86%                               | 42%                                                | 45%                   | 39%                               | 24%                                                |

<sup>18</sup> Participation in the Residential Appliance Recycling Program is measured by units recycled. Participation in the Residential Efficient Products Marketplace Program is measured by incentivized unit, i.e., lamp, fixture, or appliance. Participation in the Thermostat Purchase and WeatherSmart program is measured by the number of thermostats purchased and the number of households with controlled thermostats, respectively.

<sup>19</sup> The SCC approved the Customer Engagement programs as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

<sup>20</sup> The SCC approved the Smart Thermostat Purchase and WeatherSmart programs as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

## Table 11. Annualized program progress for active residential Phase IX and income and age qualifying energy efficiency programs (cumulative through December 31, 2023) in Virginia and North Carolina

|                        |              |                       | Virginia                          |                                                    | North Carolina        |                                   |                                                    |  |
|------------------------|--------------|-----------------------|-----------------------------------|----------------------------------------------------|-----------------------|-----------------------------------|----------------------------------------------------|--|
| Program                | Metric       | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) |  |
| Phase IX               |              |                       |                                   |                                                    |                       |                                   |                                                    |  |
|                        | Actual       | \$1.32                | 0.06                              | 26                                                 | \$0.05                | 0.002                             | 0.58                                               |  |
| Smart Home             | Planned      | \$4.38                | 12                                | 14,265                                             | \$0.20                | 0.77                              | 910                                                |  |
|                        | % of Plan    | 30%                   | 0.51%                             | 0.18%                                              | 27%                   | 0.26%                             | 0.06%                                              |  |
| THE STORES W           | Actual       | \$2.17                | 10                                | 4,760                                              | \$0.10                | 0.42                              | 238                                                |  |
| Virtual Energy Audit   | Planned      | \$7.54                | 103                               | 30,772                                             | \$0.31                | 6.60                              | 1,964                                              |  |
| (A                     | % of Plan    | 29%                   | 10%                               | 15%                                                | 32%                   | 6.30%                             | 12%                                                |  |
|                        | Actual       | \$0.61                | 0.43                              | 550                                                | \$0.02                | 0.01                              | 13                                                 |  |
| Water Savings          | Planned      | \$1.88                | 2.82                              | 5,551                                              | \$0.09                | 0.18                              | 354                                                |  |
|                        | % of Plan    | 33%                   | 15%                               | 10%                                                | 25%                   | 6.11%                             | 3.59%                                              |  |
| All Residential prog   | grams        |                       |                                   |                                                    |                       |                                   |                                                    |  |
|                        | Actual       | \$88                  | 963                               | 314,891                                            | \$2.22                | 5.38                              | 5,585                                              |  |
| Total                  | Planned      | \$130                 | 1,290                             | 736,316                                            | \$5.29                | 25                                | 29,018                                             |  |
|                        | % of Plan    | 67%                   | 75%                               | 43%                                                | 42%                   | 21%                               | 19%                                                |  |
| Phase VIII             |              |                       | and the second                    |                                                    | 100 M                 | 1                                 | 1100                                               |  |
| IAO HVAC Health and    | Actual       | \$31                  | 11                                | 2,509                                              |                       |                                   |                                                    |  |
| Safety                 | Planned      | \$33                  | 26                                | 17,406                                             |                       |                                   |                                                    |  |
| Guicty                 | % of Plan    | 95%                   | 41%                               | 14%                                                |                       |                                   |                                                    |  |
| Phase IX               |              |                       |                                   |                                                    |                       |                                   |                                                    |  |
|                        | Actual       | \$4.84                | 0.14                              | 686                                                |                       |                                   |                                                    |  |
| IAQ Solar              | Planned      | \$21                  | 1.11                              | 4,076                                              |                       |                                   |                                                    |  |
|                        | % of Plan    | 23%                   | 12%                               | 17%                                                |                       |                                   |                                                    |  |
| Posidential IAO        | Actual       | \$14                  | 10                                | 5,749                                              | \$0.26                | 0.04                              | 66                                                 |  |
| Energy Efficiency      | Planned      | \$15                  | 19                                | 1,027                                              | \$0.75                | 1.24                              | 66                                                 |  |
| Energy Enterency       | % of Plan    | 95%                   | 51%                               | 560%                                               | 34%                   | 3.22%                             | 101%                                               |  |
| Phase X                |              |                       |                                   |                                                    |                       |                                   |                                                    |  |
| <b>Residential IAQ</b> | Actual       | \$0.57                | 0.004                             | 1.64                                               |                       |                                   |                                                    |  |
| Home Improvement       | Planned      | \$1.29                | 0.40                              | 32                                                 |                       |                                   |                                                    |  |
| Enhanced               | % of Plan    | 44%                   | 1.00%                             | 5.19%                                              |                       |                                   |                                                    |  |
| All Income and Age     | Qualifying p | ograms                |                                   |                                                    | 2                     |                                   |                                                    |  |
|                        | Actual       | \$50                  | 21                                | 8,946                                              | \$0.26                | 0.04                              | 66                                                 |  |
| Total                  | Planned      | \$69                  | 47                                | 22,541                                             | \$0.75                | 1.24                              | 66                                                 |  |
|                        | % of Plan    | 73%                   | 44%                               | 40%                                                | 34%                   | 3.22%                             | 101%                                               |  |
|                        |              |                       |                                   |                                                    |                       |                                   |                                                    |  |

Table 12. Annualized program progress for active non-residential Phases VII and VIII energy efficiency programs (cumulative through December 31, 2023) in Virginia and North Carolina<sup>21</sup>

|                         |           |                       | Virginia                          |                                                    | North Carolina        |                                   |                                                    |  |
|-------------------------|-----------|-----------------------|-----------------------------------|----------------------------------------------------|-----------------------|-----------------------------------|----------------------------------------------------|--|
| Program                 | Metric    | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) |  |
| Phase VII               |           |                       |                                   |                                                    | -                     |                                   |                                                    |  |
| Heating and Cooling     | Actual    | \$5.81                | 0.15                              | 20,670                                             | \$0.14                | 0.002                             | 100                                                |  |
| Efficiency              | Planned   | \$8.72                | 2.98                              | 37,074                                             | \$0.48                | 0.17                              | 2,089                                              |  |
| Enciency                | % of Plan | 67%                   | 5.06%                             | 56%                                                | 30%                   | 1.19%                             | 4.78%                                              |  |
| Lighting Systems 9      | Actual    | \$12                  | 1.06                              | 44,144                                             | \$0.53                | 0.03                              | 1,157                                              |  |
| Controls                | Planned   | \$9.00                | 1.99                              | 40,100                                             | \$0.47                | 0.11                              | 2,118                                              |  |
| Controis                | % of Plan | 136%                  | 53%                               | 110%                                               | 114%                  | 27%                               | 55%                                                |  |
|                         | Actual    | \$3.23                | 0.17                              | 11,370                                             | \$0.11                | 0.003                             | 85                                                 |  |
| Office                  | Planned   | \$5.48                | 0.36                              | 20,977                                             | \$0.29                | 0.02                              | 1,172                                              |  |
|                         | % of Plan | 59%                   | 47%                               | 54%                                                | 37%                   | 15%                               | 7.21%                                              |  |
|                         | Actual    | \$2.84                | 0.06                              | 11,422                                             | \$0.13                | 0.004                             | 378                                                |  |
| Manufacturing           | Planned   | \$5.85                | 0.30                              | 13,661                                             | \$0.31                | 0.02                              | 731                                                |  |
|                         | % of Plan | 49%                   | 21%                               | 84%                                                | 41%                   | 25%                               | 52%                                                |  |
|                         | Actual    | \$1.40                | 0.09                              | 467                                                | \$0.07                | 1.30                              | 14                                                 |  |
| Window Film             | Planned   | \$2.07                | 572                               | 7,551                                              | \$0.11                | 32                                | 424                                                |  |
|                         | % of Plan | 68%                   | 0.02%                             | 6.18%                                              | 60%                   | 4.04%                             | 3.29%                                              |  |
| Phase VIII              |           |                       |                                   | - 12. 21                                           |                       |                                   | 1 W/2                                              |  |
| Midatus and Engenera    | Actual    | \$2.10                | 0.20                              | 3,519                                              |                       |                                   |                                                    |  |
| Efficiency Products     | Planned   | \$5.67                | 0.90                              | 11,503                                             |                       |                                   |                                                    |  |
| Eniciency Products      | % of Plan | 37%                   | 23%                               | 31%                                                |                       |                                   |                                                    |  |
|                         | Actual    | \$0.71                | 0.03                              | 340                                                |                       |                                   |                                                    |  |
| Multifamily             | Planned   | \$1.39                | 4.55                              | 7,783                                              |                       |                                   |                                                    |  |
|                         | % of Plan | 51%                   | 0.75%                             | 4.36%                                              |                       |                                   |                                                    |  |
|                         | Actual    | \$3.35                | 0.01                              | 25,875                                             | \$0.11                | 0.001                             | 39                                                 |  |
| <b>New Construction</b> | Planned   | \$5.15                | 0.16                              | 7,813                                              | \$0.32                | 0.01                              | 488                                                |  |
|                         | % of Plan | 65%                   | 5.00%                             | 331%                                               | 34%                   | 10%                               | 8.08%                                              |  |
| Small Business          | Actual    | \$11                  | 1.85                              | 10,604                                             | \$0.61                | 0.06                              | 1,564                                              |  |
| Improvement             | Planned   | \$11                  | 1.90                              | 27,598                                             | \$0.68                | 0.12                              | 1,785                                              |  |
| Enhanced                | % of Plan | 99%                   | 97%                               | 38%                                                | 90%                   | 51%                               | 88%                                                |  |

<sup>21</sup> Participation in the Non-Residential Window Film program is reported in square feet rather than number of participants. Participation in the Midstream Energy Efficiency Products program is reported in the number of invoices rebated. Table 13. Annualized program progress for active non-residential Phases IX and X energy efficiency programs (cumulative through December 31, 2023) in Virginia and North Carolina<sup>22</sup>

|                     |           |                                                                                                                 | Virginia                          |                                                    | North Carolina        |                                   |                                                    |  |
|---------------------|-----------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------|-----------------------|-----------------------------------|----------------------------------------------------|--|
| Program             | Metric    | Expenditures<br>(\$M)                                                                                           | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) | Expenditures<br>(\$M) | Gross<br>participants<br>(1,000s) | Total annualized<br>net energy<br>savings (MWh/yr) |  |
| Phase IX            |           | 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 |                                   |                                                    |                       |                                   |                                                    |  |
|                     | Actual    | \$1.38                                                                                                          | 0.01                              | 5,720                                              |                       |                                   |                                                    |  |
| Agricultural Energy | Planned   | \$1.77                                                                                                          | 0.30                              | 3,746                                              |                       |                                   |                                                    |  |
| Linciency           | % of Plan | 78%                                                                                                             | 3.64%                             | 153%                                               |                       |                                   |                                                    |  |
| Duilding Automotion | Actual    | \$0.79                                                                                                          | 0                                 | 0                                                  | \$0.03                | 0                                 | 0                                                  |  |
| Sustom              | Planned   | \$1.84                                                                                                          | 0.06                              | 7,560                                              | \$0.08                | 0.004                             | 540                                                |  |
| System              | % of Plan | 43%                                                                                                             | 0%                                | 0%                                                 | 41%                   | 0%                                | 0%                                                 |  |
| Duilding            | Actual    | \$1.76                                                                                                          | 0.05                              | 14,091                                             | \$0.04                | 0                                 | 0                                                  |  |
| Ontimization        | Planned   | \$2.12                                                                                                          | 0.06                              | 9,217                                              | \$0.09                | 0.004                             | 658                                                |  |
| Optimization        | % of Plan | 83%                                                                                                             | 80%                               | 153%                                               | 43%                   | 0%                                | 0%                                                 |  |
|                     | Actual    | \$1.16                                                                                                          | 0                                 | 0                                                  | \$0.05                | 0                                 | 0                                                  |  |
| Engagement          | Planned   | \$2.99                                                                                                          | 0.11                              | 7,951                                              | \$0.14                | 0.01                              | 442                                                |  |
|                     | % of Plan | 39%                                                                                                             | 0%                                | 0%                                                 | 34%                   | 0%                                | 0%                                                 |  |
| Drecorintivo        | Actual    | \$16                                                                                                            | 0.96                              | 20,879                                             | \$0.12                | 0.01                              | 20                                                 |  |
| Enhanced            | Planned   | \$8.25                                                                                                          | 1.13                              | 30,455                                             | \$0.36                | 0.07                              | 1,944                                              |  |
| Linanceu            | % of Plan | 192%                                                                                                            | 85%                               | 69%                                                | 35%                   | 18%                               | 1.03%                                              |  |
| Phase X             | Carlo and |                                                                                                                 |                                   |                                                    | - 10                  |                                   |                                                    |  |
| Lighting Systems    | Actual    | \$3.32                                                                                                          | 0.26                              | 18,748                                             | \$0.12                | 0.01                              | 583                                                |  |
| Controls            | Planned   | \$10                                                                                                            | 0.91                              | 63,137                                             | \$0.40                | 0.06                              | 4,015                                              |  |
| Controis            | % of Plan | 34%                                                                                                             | 28%                               | 30%                                                | 29%                   | 8.62%                             | 15%                                                |  |
| All Non-Residential | programs  |                                                                                                                 |                                   |                                                    | -                     |                                   | and the second second                              |  |
|                     | Actual    | \$66                                                                                                            | 4.89                              | 187,848                                            | \$2.01                | 1.42                              | 3,940                                              |  |
| Total               | Planned   | \$78                                                                                                            | 588                               | 288,175                                            | \$3.58                | 33                                | 15,964                                             |  |
|                     | % of Plan | 84%                                                                                                             | 0.83%                             | 65%                                                | 56%                   | 4.34%                             | 25%                                                |  |
| All programs        |           |                                                                                                                 |                                   | and the second second                              |                       |                                   |                                                    |  |
|                     | Actual    | \$204                                                                                                           | 989                               | 511,685                                            | \$4.49                | 6.84                              | 9,591                                              |  |
| Total               | Planned   | \$278                                                                                                           | 1,925                             | 1,047,032                                          | \$10                  | 59                                | 45,048                                             |  |
|                     | % of Plan | 73%                                                                                                             | 51%                               | 49%                                                | 47%                   | 12%                               | 21%                                                |  |

<sup>22</sup> Participant total excludes the Efficient Products Marketplace and Window Film (DSM Phase VII) programs because they are measured by units incentivized and square feet installed, respectively, rather than by customers enrolled. While the Appliance Recycling program participation is measured by the number of units recycled, the program limits each customer to two units per household.

## Summary of peak shaving programs

Table 14 shows key performance indicators for Dominion Energy's four peak shaving programs.

The Residential Smart Thermostat Rewards Program (Virginia and North Carolina) added Google Nest as one of its participating manufacturers. This program expansion nearly doubled the program participation between 2022 and 2023.

2023 was the first year that the Electric Vehicle Charger Rewards Program (Virginia) called demand response events. The Water Savings Demand Response program enrolled customers in 2023. The program was designed with the assumption that the penetration rate of heat pump water heaters would increase. However, both the market availability of controllable water heaters and their capital costs have slowed the uptake of this important measure. DNV conducted EM&V impact evaluations of the three programs that called demand response events in 2023: the Non-Residential Distributed Generation Program, the Smart Thermostat Rewards Program, and the Electric Vehicle Reward Program (details provided in Appendix L, Appendix M, and Appendix N). The key metrics for evaluating performance indicators are expenditures, net participation, and net peak shaving potential in kW.

| Table 14. Portfolio spending and net peak shaving potential by program (cumulative thr | ough December |
|----------------------------------------------------------------------------------------|---------------|
| 31, 2023) <sup>23, 24</sup>                                                            |               |

| DSM<br>phase | Program                          | Metric    | Expenditures<br>(\$M) | Participants<br>(1,000s) | Peak shaving<br>potential (kW) |
|--------------|----------------------------------|-----------|-----------------------|--------------------------|--------------------------------|
| Reside       | ential                           |           |                       |                          |                                |
|              |                                  | Actual    | \$0.45                | 1.49                     | 300                            |
|              | EV Charger Rewards               | Planned   | \$0.96                | 1.27                     | 1,271                          |
| VIII         |                                  | % of Plan | 46%                   | 117%                     | 24%                            |
| VIII         | Owner The second of              | Actual    | \$4.24                | 34                       | 39,107                         |
|              | Smart Thermostat<br>Rewards      | Planned   | \$6.32                | 30                       | 47,439                         |
|              |                                  | % of Plan | 67%                   | 113%                     | 82%                            |
|              | Water Savings Demand<br>Response | Actual    | \$0.26                | 0.008                    | 0                              |
| IX           |                                  | Planned   | \$0.69                | 2.00                     | 1,039                          |
|              |                                  | % of Plan | 38%                   | 0.40%                    | 0%                             |
| Non-R        | esidential                       |           |                       | a the second and         |                                |
|              |                                  | Actual    | \$7.38                | 0.01                     | 6,688                          |
| н            | <b>Distributed Generation</b>    | Planned   | \$15                  | 0.01                     | 5,880                          |
|              |                                  | % of Plan | 48%                   | 98%                      | 114%                           |
| Total        |                                  |           |                       |                          |                                |
|              |                                  | Actual    | 12                    | 35                       | 46,095                         |
|              | All Programs                     | Planned   | 23                    | 33                       | 55,629                         |
|              |                                  | % of Plan | 53%                   | 107%                     | 83%                            |

<sup>23</sup> Participation is defined by the number of participating accounts except for in the Distributed Generation program. In this program, participation is defined by the number of enrolled megawatts.

<sup>24</sup> The SCC approved the Smart Thermostat Rewards Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). After additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020 as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.



#### 1.1 Reporting compliance requirements in Virginia

In Virginia, this report is designed to comply with three major legal requirements. The first is the SCC's Order requiring detailed evaluation, measurement, and verification (EM&V) reports following the implementation of demand-side management (DSM) programs. This Order states:

The purpose of DSM programs is to reduce energy usage, either at peak times (demand response and peak-shaving programs) or year-round (energy efficiency programs). Once DSM programs have been approved, the Company is required to submit annual evaluation, measurement, and verification ("EM&V") reports of the approved programs to the Commission including evidence of actual energy savings achieved as a result of each specific program along with revised cost-benefit test results that incorporate actual Virginia energy savings and cost data.<sup>25</sup>

The second legal requirement comes from the Virginia Clean Economy Act (VCEA), which states:

The Commission shall annually monitor and report to the General Assembly the performance of all programs approved pursuant to this subdivision, including each utility's compliance with the total annual savings required by § 56-596.2, as well as the annual and lifecycle net and gross energy and capacity savings, related emissions reductions, and other quantifiable benefits of each program; total customer bill savings that the programs produce; utility spending on each program, including any associated administrative costs; and each utility's avoided costs and cost-effectiveness results.<sup>26</sup>

The third legal requirement comes from Virginia's "EM&V Rule," which outlines the various elements that must be included in the Company's annual EM&V report.<sup>27</sup> In keeping with the motion granted by the SCC in Case No. PUR-2018-00168, this and all future EM&V reports shall be issued on or before June 15 of each calendar year.<sup>28</sup> Refer to Appendix A for a specific list of the reporting compliance requirements and where the required information can be found in this report or appendices to the report.

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<sup>&</sup>lt;sup>25</sup> Virginia State Corporation Commission. Ex Parte: In the matter of baseline determination, methodologies for evaluation, measurement, and verification of existing demand-side management programs, and the consideration of a standardized presentation of summary data for Virginia Electric and Power Company, Case No. PUR-2020-00156, Final Order (October 27, 2021).

<sup>&</sup>lt;sup>26</sup> Virginia State Code Section 56-585.1 A 5 c (April 11, 2020).

<sup>&</sup>lt;sup>27</sup> 20 VAC 5-318-50, developed through SCC Case No. PUR-2017-00047. November 9, 2017.

<sup>&</sup>lt;sup>28</sup> Motion of Virginia Electric and Power Company to Extend and Modify Filing Date for Evaluation, Measurement & Verification Reports and for Expedited Consideration, Case No. PUR-2020-00156, Order Granting Motion (May 13, 2022).



## 1.2 Reporting compliance requirements in North Carolina

In North Carolina, this report meets the EM&V requirements established by the North Carolina Utilities Commission (NCUC). EM&V reports about the Company's North Carolina programs must be filed with the NCUC and must include the EM&V reporting from Virginia.<sup>29, 30, 31</sup>

Refer to APPENDIX A for a specific list of the reporting compliance requirements and where the required information can be found in this report or appendices to the report.

## 1.3 Study approach

Figure 1-1 illustrates the EM&V process that Dominion Energy follows to track key program performance indicators and evaluate them according to rules and orders issued by the SCC and the NCUC and described in detail above. Refer to APPENDIX D for a detailed description of the methodologies used for calculating the results in this report, and to APPENDIX E for the program-specific EM&V plans that guide these methodologies.



#### Figure 1-1. Dominion Energy program evaluation, measurement, and verification process

EM&V is an important part of a program's cycle because its findings can be used during the program planning and design stages and can inform continuous improvement as a program evolves.

<sup>31</sup> SCC Case No. PUR-2018-00168 on April 30, 2020.

<sup>&</sup>lt;sup>29</sup> In the Matter of Application of Virginia Electric and Power Company d/b/a Dominion North Carolina Power, for Approval of Demand Side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69, Order Approving DSM/EE Rider and Requiring Customer Notice at 13, Docket No. E-22, Sub 473 (December 13, 2011).

<sup>&</sup>lt;sup>30</sup> Through its Orders issued in Docket No. E-22, Sub 473; and finally the NCUC's instruction to align its EM&V filing schedule with that in Virginia (Docket No. E-22, Sub 524).



#### 1.4 Report structure

Sections 2 through 5 contain the one-page summaries of the EM&V results for all the programs that were active in 2023. Each page contains the following:

- 1. VA SCC and NCUC case and docket numbers
- 2. Years program has been open
- 3. Per participant net savings per year
- 4. Eligibility requirements and measure list
- 5. Quick snapshot view of program performance to date by participation, net energy savings, and program costs
- 6. Key participant, energy, and demand metrics
- 7. Graphic summary of program composition by measure, building type, or some other valuable information

Following the body of the report, we provide appendices detailing supporting methodologies and program data in compliance with the legal requirements detailed above in Sections 1.1 and 1.2.

- APPENDIX A is a matrix showing in detail how DNV is complying with each legal requirement and order.
- APPENDIX B is the detailed version of this report, with program write-ups instead of one-page summaries.
- APPENDIX C provides a glossary of terms.
- APPENDIX D describes, in detail, the methodologies used to produce the results reported in the body of this report and supporting appendices.
- APPENDIX E contains the EM&V plans for each of the programs with program impacts that will be tracked and evaluated next year.
- APPENDIX F is the Dominion Energy Technical Reference Manual (TRM). It lists the protocols and assumptions used to
  calculate gross annualized savings, gross peak summer and winter demand reductions, water savings, and lifetime
  savings for the savings reported in this report.
- APPENDIX G through APPENDIX I present the detailed reports and memos documenting the impact evaluations and indepth studies conducted for the following programs:
  - Non-Residential Distributed Generation (APPENDIX G)
  - Residential Smart Thermostat Reward (APPENDIX H)
  - Residential EV Charger Reward (APPENDIX I)
- APPENDIX J and APPENDIX K contain the detailed program performance indicators for each active and closed program with persistent savings in 2023 in Virginia and North Carolina respectively. The results are presented at these levels of detail:
  - Annual
  - Monthly for the reporting year (i.e., 2023)
  - Measure-level
  - Rate schedule level, compared to rate schedule level planned savings and compared to rate schedule level consumption
  - Benefit-cost ratios, including updated cost/benefit analysis of the DSM programs, along with a comparison
    of the updated cost/benefit analysis to the original cost/benefit analysis and all other cost/benefit analyses
    from prior EM&V Reports.
- APPENDIX L contains detailed program cumulative savings for each active and closed program with persistent savings in 2023 used for claiming lost revenue, program performance incentives, IRP modeling, lifetime savings accounting, and other purposes used in both states.


Section 1.5 shows the specific programs included in this report and the SCC's or NCUC's order date for approval, suspension, reinstatement, and closure of each of these programs. It also shows the average annualized kWh/year per participant.

## 1.5 Programs covered in this report

This report divides the DSM programs into four categories:

- Residential Energy Efficiency Programs (Section 2)
- Income and Age Qualifying Energy Efficiency Programs (Section 3)
- Non-Residential Energy Efficiency Programs (Section 4)
- Peak Shaving Programs (Section 5)

The tables in Sections 1.5.1 through 1.5.3 show the active, closed, and launching programs addressed in this report. The tables include the following information about each program:

- SCC's or NCUC's order dates for approval, suspension, reinstatement, and closure
- Average annualized kWh/year per for active, closed, and launching programs
- Appendices where more detailed data can be found about the respective program (e.g., EM&V plans, 2023 monthly
  program performance indicators, measure-level performance indicators, rate schedule level performance indicators)



## 1.5.1 Active programs

Table 1-1. Residential Phases VII and VIII energy efficiency programs open to enrollment or had savings in 2023

| DSM    |                              | State | Case/Docket                |               | Participant<br>kWh/yr | Re<br>appe      | eport<br>endices                                                                                           |  |
|--------|------------------------------|-------|----------------------------|---------------|-----------------------|-----------------|------------------------------------------------------------------------------------------------------------|--|
| phase  | Active program               | State | Number                     | Updated       | year-end<br>2023)     | Perf.<br>indic. | EM&V<br>plan                                                                                               |  |
| Reside | ntial (energy efficienc      | y)    |                            |               |                       |                 |                                                                                                            |  |
|        | Appliance                    | VA    | PUR-2018-00168             | May 2, 2019   | 387                   | 0.1             | E 2                                                                                                        |  |
|        | Recycling                    | NC    | E-22, SUB 569              | Nov. 13, 2019 | 411                   | P.6             | E.5                                                                                                        |  |
| VII    | Efficient Products           | VA    | PUR-2018-00168             | May 2, 2019   | 52                    | 0.2             | <b>F</b> 4                                                                                                 |  |
| VII    | Marketplace                  | NC    | E-22, SUB 568              | Nov. 13, 2019 | 44                    | P.1             | E.4                                                                                                        |  |
|        | Home Energy                  | VA    | PUR-2018-00168             | May 2, 2019   | 496                   | 0.3             | 5.0                                                                                                        |  |
|        | Assessment                   | NC    | E-22, SUB 567              | Nov. 13, 2019 | 467                   | P.7             | E.6                                                                                                        |  |
|        | Customer                     | VA    | Reapproved: PUR-2019-00201 | Jul. 30, 2020 | 22                    | 0.4             | E.7                                                                                                        |  |
|        | Engagement                   | NC    | N/A                        | N/A           | N/A                   | N/A             | N/A N/A<br>0.5 E.9                                                                                         |  |
|        | EV Energy                    | VA    | PUR-2019-00201             | Jul. 30, 2020 | 103                   | O.5             | E.9                                                                                                        |  |
|        | Demand Response              | NC    | N/A                        | N/A           | N/A                   | N/A             | E.3<br>E.4<br>E.6<br>E.7<br>N/A<br>E.9<br>N/A<br>E.10<br>E.12<br>E.13<br>N/A<br>E.14<br>N/A<br>E.14<br>N/A |  |
|        | Hama Datuatit                | VA    | PUR-2019-00201             | Jul. 30, 2020 | 2,182                 | 0.6             | E 40                                                                                                       |  |
|        | Home Retront                 | NC    | E-22, SUB 593              | Feb. 9, 2021  | 0                     | P.8             | D.5 E.9<br>V/A N/A<br>D.6<br>E.10<br>P.8<br>D.7<br>E.12                                                    |  |
|        | 1/ite                        | VA    | PUR-2019-00201             | Jul. 30, 2020 | 71                    | 0.7             | = 40                                                                                                       |  |
| VIII   | KIIS                         | NC    | E-22, SUB 592              | Feb. 9, 2021  | 70                    | P.2             | E.12                                                                                                       |  |
| VIII   | Manufactured                 | VA    | PUR-2019-00201             | Jul. 30, 2020 | 193                   | 0.8             | E.13                                                                                                       |  |
|        | Housing                      | NC    | N/A                        | N/A           | N/A                   | N/A             | N/A                                                                                                        |  |
|        | Multifomily                  | VA    | PUR-2019-00201             | Jul. 30, 2020 | 164                   | 0.9             | E.14                                                                                                       |  |
|        | Multianny                    | NC    | N/A                        | N/A           | N/A                   | N/A             | N/A                                                                                                        |  |
|        | New Construction             | VA    | PUR-2019-00201             | Jul. 30, 2020 | 2,180                 | 0.10            | E.15                                                                                                       |  |
|        | New Construction             | NC    | N/A                        | N/A           | N/A                   | N/A             | N/A                                                                                                        |  |
|        | Thermostat                   | VA    | Reapproved: PUR-2019-00201 | Jul. 30, 2020 | 236                   | 0.11            | F 40                                                                                                       |  |
|        | Purchase and<br>WeatherSmart | NC    | E-22, SUB 594              | Feb. 19, 2019 | 277                   | P.3             | E.10                                                                                                       |  |



Table 1-2. Residential Phase IX energy efficiency, residential Phases VII and IX demand response, and income and age qualifying programs open to enrollment or had impacts in 2023

| DSM     | Active program              | State       | Case/D                         | ocket         | Participant<br>kWh/yr       | Re<br>appe      | Report<br>appendices |  |
|---------|-----------------------------|-------------|--------------------------------|---------------|-----------------------------|-----------------|----------------------|--|
| phase   | Active program              | State       | Number                         | Updated       | (through year-<br>end 2023) | Perf.<br>indic. | EM&V<br>plan         |  |
| Reside  | ntial (energy efficiency)   | 1           |                                |               |                             |                 |                      |  |
|         | Smart Home                  | VA          | PUR-2020-00274                 | Sep. 7, 2021  | 409                         | 0.12            | E 47                 |  |
|         | Smart Home                  | NC          | E-22, SUB 618                  | Mar. 18, 2022 | 251                         | P.4             | E.17                 |  |
| IV      | Virtual Energy Audit        | VA          | PUR-2020-00274                 | Sep. 7, 2021  | 445                         | 0.13            | E 40                 |  |
| IX      | Virtual Energy Audit        | NC          | E-22, SUB 619                  | Mar. 18, 2022 | 566                         | P.10            | E.18                 |  |
|         | Weden On diama              | VA          | PUR-2020-00274                 | Sep. 7, 2021  | 1,256                       | 0.14            |                      |  |
|         | water Savings               | NC          | E-22, SUB 620                  | Mar. 18, 2022 | 1,156                       | P.5             | E.19                 |  |
| Resider | ntial (demand response)     |             |                                |               |                             |                 |                      |  |
|         | EV Charges Bowerds          | VA          | PUR-2019-00201                 | Jul. 30, 2020 | 0.201 (kW)                  | 0.43            | E.49                 |  |
|         | EV Charger Rewards          | NC          | N/A                            | N/A           | N/A                         | N/A             | N/A                  |  |
| VIII    | Smart Thermostat<br>Rewards | VA          | Reapproved: PUR-<br>2019-00201 | Jul. 30, 2020 | 0.95 (kW)                   | 0.44            | E.50                 |  |
|         |                             | NC          | E-22, SUB 594                  | Feb. 9, 2021  | 0.93 (kW)                   | P.25            |                      |  |
| DV.     | Water Savings Demand        | VA          | PUR-2019-00201                 | Jul. 30, 2020 | 0 (kW)                      | 0.45            |                      |  |
| IX      | Response                    | NC          | E-22, SUB 621                  | Mar. 18, 2022 | N/A                         | P.26            | E.51                 |  |
| Income  | and Age Qualifying (energy  | efficiency) |                                |               | 1                           | See. 1          | 122                  |  |
|         | IAQ HVAC Health and         | VA          | PUR-2019-00201                 | Jul. 30, 2020 | 172                         | 0.15            | E.20                 |  |
| VIII    | Safety                      | NC          | N/A                            | N/A           | N/A                         | N/A             | N/A                  |  |
|         |                             | VA          | PUR-2020-00274                 | Sep. 7, 2021  | 5,064                       | O.16            | E.21                 |  |
|         | IAQ Solar                   | NC          | N/A                            | N/A           | N/A                         | N/A             | N/A                  |  |
| IX      | Residential IAQ Energy      | VA          | PUR-2020-00274                 | Sep. 7, 2021  | 635                         | 0.17            |                      |  |
|         | Efficiency                  | NC          | E-22, SUB 608                  | Dec. 14, 2021 | 2,019                       | P.9             | E.22                 |  |
|         | Residential IAQ Home        | VA          | PUR-2021-00247                 | Aug. 10, 2022 | 411                         | O.18            | E.23                 |  |
| х       | Improvement Enhanced        | NC          | N/A                            | N/A           | N/A                         | N/A             | N/A                  |  |



| DSM    | Active program                                                                                                   | State | Case/D         | ocket         | Participant<br>kWh/yr       | Report<br>appendices                                                                                                                                                                                                                                                                                                                                            |              |
|--------|------------------------------------------------------------------------------------------------------------------|-------|----------------|---------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| phase  |                                                                                                                  | State | Number         | Updated       | (through year-<br>end 2023) | Report<br>appendices           Perf.<br>indic.         EM&V<br>plan           5         0.21<br>P.13         E.28<br>E.28           6         0.22<br>P.14         E.29           7         0.23<br>P.15         E.30           6         0.24<br>P.20         E.31           7         0.25<br>P.16         E.32           7         0.26<br>P.17         E.33 | EM&V<br>plan |
| Non-Re | esidential (energy efficiency)                                                                                   | 6     |                |               |                             |                                                                                                                                                                                                                                                                                                                                                                 |              |
|        | Heating and Cooling                                                                                              | VA    | PUR-2018-00168 | May 2, 2019   | 438,625                     | 0.21                                                                                                                                                                                                                                                                                                                                                            | E 00         |
| 100    | Efficiency                                                                                                       | NC    | E-22, SUB 574  | Nov. 13, 2019 | N/A                         | P.13                                                                                                                                                                                                                                                                                                                                                            | E.28         |
| VII    | Lighting Systems &                                                                                               | VA    | PUR-2018-00168 | May 2, 2019   | 87,273                      | 0.22                                                                                                                                                                                                                                                                                                                                                            | F 00         |
|        | Controls                                                                                                         | NC    | E-22, SUB 573  | Nov. 13, 2019 | 54,543                      | P.14                                                                                                                                                                                                                                                                                                                                                            | E.29         |
| v      | Lighting Systems &                                                                                               | VA    | PUR-2021-00247 | Aug. 10, 2022 | 72,385                      | 0.23                                                                                                                                                                                                                                                                                                                                                            | E 00         |
| x      | Controls                                                                                                         | NC    | N/A            | N/A           | 116,646                     | P.15                                                                                                                                                                                                                                                                                                                                                            | E.30         |
|        | Office                                                                                                           | VA    | PUR-2018-00168 | May 2, 2019   | 74,106                      | 0.24                                                                                                                                                                                                                                                                                                                                                            | 24           |
|        | Office                                                                                                           | NC    | E-22, SUB 572  | Nov. 13, 2019 | 45,416                      | P.20                                                                                                                                                                                                                                                                                                                                                            | E.31         |
|        | Manufacturing                                                                                                    | VA    | PUR-2018-00168 | May 2, 2019   | 164,847                     | 0.25                                                                                                                                                                                                                                                                                                                                                            | E.32         |
| VII    | manufacturing                                                                                                    | NC    | E-22, SUB 571  | Nov. 13, 2019 | 94,487                      | P.16                                                                                                                                                                                                                                                                                                                                                            | E.32         |
|        | and the second | VA    | PUR-2018-00168 | May 2, 2019   | 3,452                       | 0.26                                                                                                                                                                                                                                                                                                                                                            | F 00         |
|        |                                                                                                                  | NC    | E-22, SUB 570  | Nov. 13, 2019 | N/A                         | P.17                                                                                                                                                                                                                                                                                                                                                            | E.33         |
|        | Midstream Energy                                                                                                 | VA    | PUR-2019-00201 | Jul. 30, 2020 | 24,076                      | 0.27                                                                                                                                                                                                                                                                                                                                                            | E.34         |
|        | Efficiency Products                                                                                              | NC    | PUR-2019-00201 | Jul. 30, 2020 | N/A                         | N/A                                                                                                                                                                                                                                                                                                                                                             | N/A          |
|        | NA. 1416                                                                                                         | VA    | PUR-2019-00201 | Jul. 30, 2020 | 6,571                       | O.28                                                                                                                                                                                                                                                                                                                                                            | E.14         |
| MIL    | wuumamiiy                                                                                                        | NC    | N/A            | N/A           | N/A                         | N/A                                                                                                                                                                                                                                                                                                                                                             | N/A          |
| VIII   | New Construction                                                                                                 | VA    | PUR-2019-00201 | Jul. 30, 2020 | 3,234,344                   | 0.29                                                                                                                                                                                                                                                                                                                                                            | F 05         |
|        | New Construction                                                                                                 | NC    | E-22, SUB 591  | Feb. 9, 2021  | 39,446                      | P.18                                                                                                                                                                                                                                                                                                                                                            | E.35         |
|        | Small Business                                                                                                   | VA    | PUR-2019-00201 | Jul. 30, 2020 | 4,205                       | O.30                                                                                                                                                                                                                                                                                                                                                            | E 00         |
|        | Improvement Enhanced                                                                                             | NC    | E-22, SUB 596  | Feb. 9, 2021  | 24,486                      | E.38<br>P.19                                                                                                                                                                                                                                                                                                                                                    |              |

Table 1-3. Non-residential Phases VII and VIII energy efficiency programs open to enrollment or had savings in 2023



Table 1-4. Non-residential Phase IX energy efficiency and Phase II demand response programs open to enrollment or had impacts in 2023

| DSM<br>phase | Activo program              | State | Case/Docket               |               | Participant<br>kWh/yr       | Re<br>appei            | port<br>ndices                      |
|--------------|-----------------------------|-------|---------------------------|---------------|-----------------------------|------------------------|-------------------------------------|
| phase        | Active program              | State | Number                    | Updated       | (through year-<br>end 2023) | Perf.<br>indic.        | EM&V<br>plan                        |
| Non-Re       | esidential (energy efficier | ncy)  | A CONTRACTOR OF THE       |               |                             |                        |                                     |
|              | Agricultural Energy         | VA    | PUR-2020-00274            | Sep. 7, 2021  | 111,050                     | 0.31                   | E.41<br>E.42<br>E.36<br>E.48<br>N/A |
|              | Efficiency                  | NC    | N/A                       | N/A           | N/A                         | N/A                    |                                     |
|              | Building Automation         | VA    | PUR-2020-00274            | Sep. 7, 2021  | N/A                         | 0.32                   | F 40                                |
|              | System                      | NC    | E-22, SUB 614             | Mar. 18, 2022 | N/A                         | P.22                   | E.40                                |
| IV           | Duilding Optimization       | VA    | PUR-2020-00274            | Sep. 7, 2021  | 290,074                     | 4 0.33<br>E.41<br>P.21 |                                     |
| IX           | Building Optimization       | NC    | E-22, SUB 615             | Mar. 18, 2022 | N/A                         |                        | E.41                                |
|              |                             | VA    | PUR-2020-00274            | Sep. 7, 2021  | N/A                         | 0.34                   | P.21<br>0.34                        |
|              | Engagement                  | NC    | E-22, SUB 616             | Mar. 18, 2022 | N/A                         | P.23                   | E.42                                |
|              | Prescriptive                | VA    | PUR-2020-00274            | Sep. 7, 2021  | 21,707                      | O.35                   |                                     |
|              | Enhanced                    | NC    | E-22, SUB 617             | Mar. 18, 2022 | 1,539                       | P.11                   | E.36                                |
| Non-Re       | sidential (demand respo     | nse)  |                           |               |                             |                        |                                     |
|              | Distributed                 | VA    | Extension: PUR-2020-00274 | Sep. 7, 2021  | 1163 (kW)                   | 0.42                   | E.48                                |
| п            | Generation                  | NC    | N/A                       | N/A           | N/A                         | N/A                    | N/A                                 |



## 1.5.2 Closed programs

## Table 1-5. Closed residential and income and age qualifying programs

| DSM    | Closed program      | State | Case/Doo                      | cket          | Participant<br>kWh/yr       | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|---------------------|-------|-------------------------------|---------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| phase  |                     | Sidle | Number                        | Updated       | (through year-<br>end 2023) | appendix                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Reside | ntial               |       |                               |               |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | l inclution of      | VA    | PUE-2009-00081                | Mar. 24, 2010 | 28                          | 0.52                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Lighting            | NC    | E-22, Sub 469                 | Feb. 22, 2011 | 28                          | P.26                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1      | Residential Smart   | VA    | Extension: PUR-2019-<br>00201 | Jul. 30, 2020 | 0.53 (kW)                   | Initicators appendix         28       0.52         28       P.26         28       P.26         200       0.41         210       0.52         221       P.30         214       0.54         229       P.28         758       0.55         209       P.29         528       0.57         755       P.31         899       0.58         N/A       N/A         211       P.32         528       0.53         90       P.27         85       0.66         22       P.40 |
|        | Cooling Reward      | NC    | E-22, Sub 465                 | Feb. 22, 2011 | 0.53 (kW)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | Duct Scaling        | VA    | PUE-2011-00093                | Apr. 30, 2012 | 232                         | O.56                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Duct Sealing        | NC    | E-22, Sub 397                 | Dec.16, 2013  | 242                         | P.30                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Heat Dump Tupe Up   | VA    | PUE-2011-00093                | Apr. 30, 2012 | 214                         | 0.54                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Heat Pump Tune-Op   | NC    | E-22, Sub 499                 | Dec. 17, 2013 | 229                         | P.28                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Heat Pump Ungrade   | VA    | PUE-2011-00093                | Apr. 30, 2012 | 758                         | O.55                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | neat rump opgrade   | NC    | E-22, Sub 500                 | Dec. 17, 2013 | 209                         | P.29                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Home Energy Check-  | VA    | PUE-2011-00093                | Apr. 30, 2012 | 628                         | 0.57                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Up                  | NC    | E-22, Sub 498                 | Dec. 17, 2013 | 755                         | P.31                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| N/     | Appliance Decycling | VA    | PUE-2014-00071                | Apr. 24, 2015 | 499                         | O.58                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| IV     | Appliance Recycling | NC    | N/A                           | N/A           | N/A                         | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| v      | Potoil LED          | VA    | N/A                           | N/A           | N/A                         | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| v      | Retail LED          | NC    | E-22, Sub 539                 | Dec. 20, 2016 | 21                          | Performance<br>indicators<br>appendix<br>0.52<br>P.26<br>0.41<br>P.24<br>0.56<br>P.30<br>0.54<br>P.30<br>0.54<br>P.28<br>0.55<br>P.29<br>0.57<br>P.29<br>0.57<br>P.29<br>0.57<br>P.31<br>0.58<br>N/A<br>P.31<br>0.58<br>N/A<br>P.31<br>0.58<br>N/A<br>P.31<br>0.58<br>N/A<br>P.31<br>0.58<br>N/A<br>P.32                                                                                                                                                           |
| Income | and Age Qualifying  |       | a la serie                    |               | 27                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | Residential Low     | VA    | PUE-2009-00081                | Mar. 24, 2010 | 528                         | 0.53                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|        | Income              | NC    | E-22, Sub 523                 | Oct. 6, 2015  | 490                         | P.27                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 11/    | Residential IAQ     | VA    | PUE-2014-00071                | Apr. 24, 2015 | 385                         | O.66                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| IV     | Home Improvement    | NC    | Reopening: E-22 SUB           | Jun. 26, 2018 | 622                         | P.40                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



## Table 1-6. Closed non-residential programs

| DSM    | Closed program           | State | Case/Docket    |               | Participant<br>kWh/yr       | Performance                                                                                                                |
|--------|--------------------------|-------|----------------|---------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|
| phase  |                          | State | Number         | Updated       | (through year-<br>end 2023) | appendix                                                                                                                   |
| Non-Re | esidential               |       |                |               |                             |                                                                                                                            |
|        |                          | VA    | PUE-2009-00081 | Mar. 24, 2010 | 47,361                      | O.60                                                                                                                       |
|        | Commercial HVAC Upgrade  | NC    | E-22, Sub 467  | Aug. 13, 2014 | 27,641                      | P.34                                                                                                                       |
|        | Commonated Linkston      | VA    | PUE-2009-00081 | Mar. 24, 2010 | 29,337                      | O.59                                                                                                                       |
|        | Commercial Lighting      | NC    | E-22, Sub 469  | Aug. 13, 2014 | 58,372                      | P.33                                                                                                                       |
|        | Duct Testing and Oceling | VA    | PUE-2011-00093 | Apr. 30, 2012 | 15,491                      | O.61                                                                                                                       |
|        | Duct Testing and Sealing | NC    | E-22, Sub 496  | Dec.17, 2013  | 12,621                      | P.35                                                                                                                       |
| п      | Francis Acadiá           | VA    | PUE-2011-00093 | Apr. 30, 2012 | 23,982                      | O.62                                                                                                                       |
|        | Energy Audit             | NC    | E-22, Sub 495  | Dec. 16, 2013 | 12,838                      | <ul> <li>P.33</li> <li>O.61</li> <li>P.35</li> <li>O.62</li> <li>P.36</li> <li>O.63</li> <li>P.37</li> <li>O.64</li> </ul> |
|        | Heating & Cooling        | VA    | PUE-2013-00072 | Apr. 29, 2014 | 27,248                      | O.63                                                                                                                       |
|        | Efficiency               | NC    | E-22, Sub 507  | Oct. 27, 2014 | 2,062                       | P.37                                                                                                                       |
|        | Lighting Systems &       | VA    | PUE-2013-00072 | Apr. 29, 2014 | 45,611                      | O.64                                                                                                                       |
| m      | Controls                 | NC    | E-22, Sub 508  | Oct. 27, 2014 | 15,090                      | P.38                                                                                                                       |
|        | 14/2 J                   | VA    | PUE-2013-00072 | Apr. 29, 2014 | 6,440                       | O.65                                                                                                                       |
|        |                          | NC    | E-22 Sub 509   | Oct. 16, 2018 | 6,974                       | P.39                                                                                                                       |
| v      | Small Business           | VA    | PUE-2015-00089 | Apr. 19, 2016 | 20,401                      | O.67                                                                                                                       |
| V      | Improvement              | NC    | E-22 Sub 538   | Oct. 26, 2016 | 24,235                      | P.41                                                                                                                       |
| M      | Dresseletius             | VA    | PUE-2016-00111 | Jun. 1, 2017  | 14,730                      | O.68                                                                                                                       |
| VI     | Prescriptive             | NC    | E-22, SUB 543  | Oct. 16, 2017 | 13,410                      | P.10                                                                                                                       |



## 1.5.3 Launching programs

Table 1-7. Residential and income and age qualifying programs launching in 2024

| DSM    |                            |       | Case/Docke                | t             | Report appendices |              |  |
|--------|----------------------------|-------|---------------------------|---------------|-------------------|--------------|--|
| phase  | Launching program          | State | Number                    | Updated       | Perf.<br>indic.   | EM&V<br>plan |  |
| Reside | ntial                      |       |                           |               |                   |              |  |
| MIII   | Usura Datrațit Dundle      | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.6               | F (0         |  |
| VIII   | nome Retront Bunale        | NC    | E-22, SUB 683             | Jan. 22, 2024 | P.8               | E.10         |  |
|        | Efficient Products         | VA    | Extension: PUR-2022-00210 | Aug. 4, 2023  | 0.2               | E.5          |  |
|        | Marketplace                | NC    | N/A                       | N/A           | N/A               | N/A          |  |
|        | Customer Engegang-t        | VA    | Extension: PUR-2022-00210 | Aug. 4, 2023  | O.48              | E.8          |  |
|        | Customer Engagement        |       | N/A                       | N/A           | N/A               | N/A          |  |
| VI     | Enhanced Home Date St      | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.6               | E.11         |  |
| XI     | Enhanced Home Retrofit     | NC    | N/A                       | N/A           | N/A               | N/A          |  |
|        | Book Timo Pohoto           | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.51              | E.53         |  |
|        | Реак Пте керате            | NC    | N/A                       | N/A           | N/A               | N/A          |  |
|        | Telematics Vehicle Charger | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.50              | E.52         |  |
|        | Pilot                      | NC    | N/A                       | N/A           | N/A               | N/A          |  |
| Income | and Age Qualifying         |       |                           |               |                   |              |  |
|        | New Desidential IAO        | VA    | PUR-2021-00247            | Aug. 10, 2022 | O.19              | E.24         |  |
| v      | Non-Residential IAQ        | NC    | N/A                       | N/A           | N/A               | N/A          |  |
| X      | Residential IAQ Target     | VA    | PUR-2021-00247            | Aug. 10, 2022 | O.20              | E.25         |  |
|        | Report                     | NC    | N/A                       | N/A           | N/A               | N/A          |  |
|        |                            | VA    | PUR-2022-00210            | Aug. 4, 2023  | 0.49              |              |  |
| M      | Residential IAQ Bundle     | NC    | E-22, SUB 684             | Jan. 22, 2024 | N/A               | E.26         |  |
| XI     | Non-Residential IAQ        | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.46              | E.27         |  |
|        | Bundle                     | NC    | N/A                       | N/A           | N/A               | N/A          |  |

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## Table 1-8. Non-residential programs launching in 2024

| DSM    | an our data and the state | Carles . | Case/D         | ocket         | Report appendices |                                                                                                                                                                   |
|--------|---------------------------|----------|----------------|---------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| phase  | Launching program         | State    | Number         | Updated       | Perf.<br>indic.   | EM&V<br>plan                                                                                                                                                      |
| Non-Re | esidential                |          |                |               |                   |                                                                                                                                                                   |
| IX     | Enhanced Prescriptive     | VA       | PUR-2022-00210 | Aug. 4, 2023  | O.35              | E 37                                                                                                                                                              |
| IA     | Emilanceu Prescriptive    | NC       | E-22, SUB 682  | Jan. 22, 2024 | P.12              | ppendices<br>EM&V<br>plan<br>E.37<br>E.43<br>N/A<br>E.43<br>N/A<br>E.44<br>N/A<br>E.45<br>N/A<br>E.45<br>N/A<br>E.46<br>N/A<br>E.54<br>N/A<br>E.54<br>N/A<br>E.54 |
|        | Line and Long             | VA       | PUR-2021-00247 | Aug. 10, 2022 | O.36              | E.43                                                                                                                                                              |
|        | Data Server Room          | NC       | N/A            | N/A           | N/A               | N/A                                                                                                                                                               |
|        | Haalthaans                | VA       | PUR-2021-00247 | Aug. 10, 2022 | 0.37              | E.44                                                                                                                                                              |
|        | HealthCare                | NC       | N/A            | N/A           | N/A               | N/A                                                                                                                                                               |
| v      |                           | VA       | PUR-2021-00247 | Aug. 10, 2022 | O.38              | E.45                                                                                                                                                              |
| x      | Hotel and Lodging         | NC       | N/A            | N/A           | N/A               | N/A                                                                                                                                                               |
|        | Small Business            | VA       | PUR-2021-00247 | Aug. 10, 2022 | O.39              | E.46                                                                                                                                                              |
|        | Behavioral                | NC       | N/A            | N/A           | N/A               | N/A                                                                                                                                                               |
|        | Valler Ontindention       | VA       | PUR-2021-00247 | Aug. 10, 2022 | O.40              | E.54                                                                                                                                                              |
|        | voltage Optimization      | NC       | N/A            | N/A           | N/A               | N/A                                                                                                                                                               |
| VI     | Questions                 | VA       | PUR-2022-00210 | Aug. 4, 2023  | 0.47              | E.47                                                                                                                                                              |
| XI     | Custom                    | NC       | N/A            | N/A           | N/A               | N/A                                                                                                                                                               |

## 1.6 Adjustments and/or corrections to prior years' calculations

DNV retrospectively adjusted and corrected winter coincident peak demand reduction values in the Residential Appliance Recycling Program (DSM Phase VII). These corrections were separate from the natural retrospective adjustments due to evaluation study findings. These adjustments are summarized in Table 1-2.

Table 1-2. Explanation of adjustments

| Correction                                                                                                               | Reason for correction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Residential Appliance<br>Recycling Program (Phase VII)<br>Program 2022 winter demand<br>reduction (kW) was adjusted. | The winter demand reduction (kW) values were omitted in the program year 2022 report, though there were specifications to calculate these values for this program in the PY2022 Technical Reference Manual (TRM), listed in Appendix F. The winter demand reduction (kW) was reported as 0 kW in 2022. Prior to 2021, winter demand reduction (kW) was not calculated for any programs. These values are displayed as "-" or dashes to indicate they were not a metric being estimated. In 2021, the program paused and had no participation, so winter demand reduction was 0 kW. The 2022 gross winter demand reduction (kW) increased from 0 kW to 70 kW and 2022 net winter demand reduction (kW) increased from 0 to 42 kW after the correction. |





#### Table 2-1. Residential energy efficiency programs open to enrollment or had savings in 2023

| DSM<br>Phase | Acronym      | Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | VA | NC |
|--------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|
|              | RAR2         | Appliance Recycling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1  | 1  |
| VII          | REEC<br>REE2 | Efficient Products Marketplace                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ✓  | ~  |
|              | RTHO         | Home Energy Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ✓  | ~  |
|              | RCEB         | Customer Engagement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ✓  |    |
|              | REVEE        | EV Energy Efficiency and Demand Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ✓  |    |
|              | RHRF         | Home Retrofit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ✓  | 1  |
| Valu         | RKTS         | Kits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ✓  | ~  |
| VIII         | RMHP         | Manufactured Housing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ✓  |    |
|              | RMFP         | Multifamily                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓  |    |
|              | RNCR         | New Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ✓  |    |
|              | RTEE         | Thermostat Purchase and WeatherSmart                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1  | ~  |
|              | RSMH         | Smart Home                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1  | 1  |
| IX           | RVAU         | Virtual Energy Audit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1  | ~  |
|              | RWEE         | Water Savings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1  | ~  |
|              |              | and the second se |    |    |

Figure 2-1 and Figure 2-2 show the cumulative count of residential program participation and gross annualized energy savings in the two states, for the programs listed above, at the county level, through December 31, 2023. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation in descending order are Fairfax, Chesterfield, and Virginia Beach City . In North Carolina, Dare, Currituck, and Halifax counties have the highest participation

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Chesterfield, and Virginia Beach City. In North Carolina, Dare, Currituck, and Halifax counties have the most energy savings.



### Figure 2-1. Virginia and North Carolina Residential Efficient Products Program Participation, by County

Participants A. Less than 10

- B. 10 100
- B. 10 100
- C. 100 1,000
- D. 1,000 3,000
- E. More than 3,000



Figure 2-2. Virginia and North Carolina Residential Efficient Products Program Gross Annualized Energy Savings, by County

## Gross Total Electric Impact

- A. Less than 100 MWh/year
- B. 100 500 MWh/year
- C. 500 MWh/year 1 GWh/year
- D. 1 5 GWh/year
- E. More than 5 GWh/year



Case #: PUE-2018-00168

## RESIDENTIAL APPLIANCE RECYCLING

2019-2023

419 kWh/yr Average Net Savings Per Participant

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### Eligibility

Measures

Refrigerator recycling
 Freezer recycling

Owner of an operational refrigerator or freezer that is at least
 10 years old and between 10 and 32 cubic feet

Incentivized **6,561** units, **16%** of planned units. Starting in June 2023, participation slowed due to operational challenges posed by the vendor, ARCA. ARCA ultimately ceased operations.

Achieved net annual energy savings of 2,748 MWh/year, 14% of planned energy savings

Spent 28% of planned expenditures

| Category                                       | 2019      | 2020      | 2021    | 2022      | 2023      | Lifetime   |
|------------------------------------------------|-----------|-----------|---------|-----------|-----------|------------|
| Total Program Cost (\$)                        | 384,884   | 473,111   | 222,880 | 702,471   | 585,278   | 2,368,625  |
| Total Program Participants (#)                 | 1,579     | 972       | 0       | 2,478     | 1,532     | 6,561      |
| Total Gross Incremental Savings (kWh/yr)       | 1,255,513 | 868,091   | 0       | 1,467,578 | 988,970   |            |
| Total Net Incremental Savings (kWh/yr)         | 753,308   | 520,855   | 0       | 880,547   | 593,382   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 188       | 130       | 0       | 220       | 148       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 113       | 78        | 0       | 132       | 89        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0         | 0         | 0       | 70        | 47        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0         | 0         | 0       | 42        | 28        |            |
| Total Net Lifetime Savings (kWh)               | 119,309   | 1,206,460 | 0       | 4,189,246 | 6,782,400 | 21,991,994 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 113       | 191       | 0       | 323       | 411       | 411        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0         | 0         | 0       | 42        | 70        | 70         |

#### TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY LOCATION



## North Carolina -

Docket #: E-22, SUB 569

## RESIDENTIAL APPLIANCE RECYCLING

2019-2023

429 kWh/yr Average Net Savings Per Participant

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## Eligibility

Measures

Refrigerator recycling
 Freezer recycling

Owner of an operational refrigerator or freezer that is at least
 10 years old and between 10 and 32 cubic feet

Incentivized **41** units, **2%** of planned units. Starting in June 2023, participation slowed due to operational challenges posed by the vendor, ARCA. ARCA ultimately ceased operations.

Achieved net annual energy savings of 17,592 kWh/year, 2% of planned energy savings

Spent 17% of planned expenditures

| Category                                       | 2019 | 2020   | 2021   | 2022   | 2023   | Lifetime |
|------------------------------------------------|------|--------|--------|--------|--------|----------|
| Total Program Cost (\$)                        | 0    | 17,270 | 11,552 | 25,314 | 24,687 | 78,823   |
| Total Program Participants (#)                 | 0    | 0      | 0      | 19     | 22     | 41       |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 0      | 14,260 | 15,059 |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 0      | 8,556  | 9,036  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 0      | 2      | 2      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 1      | 1      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 1      | 1      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 0      | 4,600  | 20,166 | 140,781  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 1      | 3      | 3        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 1      | 1        |

### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)

TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)





Case #: PUE-2018-00168

# RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE

2019-2023

17 kWh/yr Average Net Savings Per Participant

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...

11,620

planned units.

savings

## Eligibility

- · Active residential customer in Virginia
- · Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission and authorization to complete the rebate submission

 Dehumidifier Dishwasher

New ENERGY STAR® products

### Measures

- · LEDs lamps
- · Refrigerator
- Freezer

Peak

- · Clothes washer
- · C
- ·R

| Clothes dryer     Room air purifier          |            |            |             |             |           |               |
|----------------------------------------------|------------|------------|-------------|-------------|-----------|---------------|
| Category                                     | 2019       | 2020       | 2021        | 2022        | 2023      | Lifetime      |
| Total Program Cost (\$)                      | 4,636,049  | 8,063,058  | 8,459,198   | 9,952,004   | 4,134,018 | 35,244,327    |
| Total Program Participants (#)               | 2,785,850  | 2,596,966  | 4,263,855   | 5,163,385   | 19,118    | 14,829,174    |
| Total Gross Incremental Savings (kWh/yr)     | 81,119,512 | 89,881,928 | 122,317,496 | 150,318,593 | 2,608,640 |               |
| Total Net Incremental Savings (kWh/yr)       | 56,783,659 | 60,072,654 | 60,277,598  | 75,613,324  | 996,488   |               |
| eak Gross Inc. Summer Demand Reduction (kW)  | 7,421      | 8,295      | 11,274      | 13,821      | 305       |               |
| Peak Net Inc. Summer Demand Reduction (kW)   | 5,195      | 5,532      | 5,549       | 6,946       | 118       |               |
| Peak Gross Inc. Winter Demand Reduction (kW) | 0          | 0          | 23,472      | 29,038      | 147       |               |
| Peak Net Inc. Winter Demand Reduction (kW)   | 0          | 0          | 11,620      | 14,653      | 59        |               |
| Total Net Lifetime Savings (kWh)             | 10,727,983 | 97,722,792 | 243,614,941 | 458,373,267 | 472,882   | 4,210,248,413 |
| ak Net Lifetime Summer Demand Reduction (kW) | 5,195      | 10.726     | 16.276      | 23.221      | 118       | 23.340        |

Peak Net Lifetime Summer Demand Reduction (kW) Peak Net Lifetime Winter Demand Reduction (kW)

#### TOTAL PARTICIPANTS BY APPLIANCE MEASURE TOP 5

0



59

26,332

26,274

Incentivized 14,829,174 units, 111% of

Achieved net annual energy savings of 253,744 MWh/year, 68% of planned energy

Spent 86% of planned expenditures



0

| – North Carolina –                                                                                                                                                                                                                                                                          |                     |                                |              |                                                                 |                                                    |                                   |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------|--------------|-----------------------------------------------------------------|----------------------------------------------------|-----------------------------------|-------------|
| Docket #: E-22, SUB 568                                                                                                                                                                                                                                                                     |                     |                                |              |                                                                 |                                                    |                                   |             |
| RESIDENTIAL                                                                                                                                                                                                                                                                                 | EFFICI              | ENT PRO                        | DUCT         | rs n                                                            | <b>ARKETF</b>                                      | PLACE                             |             |
|                                                                                                                                                                                                                                                                                             | 17 kWh/yr A         | 2019-2023<br>verage Net Saving | gs Per Parti | icipant                                                         |                                                    |                                   |             |
| Eligibility                                                                                                                                                                                                                                                                                 |                     |                                |              |                                                                 |                                                    |                                   |             |
| <ul> <li>Active residential customer in North Carolina</li> <li>Customer that is responsible for electric bill and either owns<br/>the home or is otherwise able to secure permission and<br/>authorization to complete the rebate submission</li> <li>New ENERGY STAR® products</li> </ul> |                     |                                |              | Incentivized <b>288,004</b> units, <b>43%</b> of planned units. |                                                    |                                   |             |
| Measures                                                                                                                                                                                                                                                                                    |                     |                                | 4            | Achie<br>4,824<br>savin                                         | eved net annual e<br><b>1 MWh/year, 25</b> %<br>gs | energy savings<br>6 of planned er | of<br>nergy |
| LEDs lamps Dehu     Refrigerator Dishu     Freezer     Clothes washer     Clothes dryer     Room air purifier                                                                                                                                                                               | umidifier<br>washer |                                | 1            | Spen                                                            | t 51% of planned                                   | l expenditures                    |             |
| Category                                                                                                                                                                                                                                                                                    | 2019                | 2020                           | 202          | :1                                                              | 2022                                               | 2023                              | Lifetime    |
| Total Program Cost (\$)                                                                                                                                                                                                                                                                     | 0                   | 238,201                        | 386,5        | 15                                                              | 308,435                                            | 157,460                           | 1,090,612   |
| Total Program Participants (#)                                                                                                                                                                                                                                                              | 0                   | 86,493                         | 116,6        | 68                                                              | 84,301                                             | 542                               | 288,004     |
| Total Gross Incremental Savings (kWh/yr)                                                                                                                                                                                                                                                    | 0                   | 2,707,492                      | 3,582,       | 113                                                             | 2,828,480                                          | 65,245                            |             |
| Total Net Incremental Savings (kWh/yr)                                                                                                                                                                                                                                                      | 0                   | 1,796,481                      | 1,676,0      | 053                                                             | 1,327,228                                          | 24,084                            |             |
| Peak Gross Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                                                                | 0                   | 249                            | 330          |                                                                 | 261                                                | 8                                 |             |
| Peak Net Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                                                                  | 0                   | 165                            | 154          |                                                                 | 122                                                | 3                                 |             |
| Peak Gross Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                                                                | 0                   | 0                              | 686          |                                                                 | 543                                                | 3                                 |             |

Total Net Lifetime Savings (kWh) Peak Net Lifetime Summer Demand Reduction (kW) Peak Net Lifetime Winter Demand Reduction (kW)

Peak Net Inc. Winter Demand Reduction (kW)

#### TOTAL PARTICIPANTS BY APPLIANCE MEASURE TOP 5

0

0

0

0

TOTAL SAVINGS BY APPLIANCE MEASURE TOP 5 (MWH/YR)

256

7,515,976

441

579

1

11,222

3

1

80,007,282

444

580



0

816,795

165

0

323

3,492,945

319

323

## Case #: PUE-2018-00168

## RESIDENTIAL HOME ENERGY ASSESSMENT

2019-2023

576 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia living in a single-family detached or attached residence
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- · Work must be completed by a participating contractor

### Measures

- Direct install lighting
- · Cool roof
- · Hot water ENERGY STAR appliances
- Faucets aerators
- · Low flow showerheads
- · Heat pump tune-up and upgrade
- · Duct sealing and duct Insulation

Achieved net annual energy savings of 13,389 MWh/year, 27% of planned energy savings

participation



Spent 92% of planned expenditures

Enrolled 23,265 customers, 17% of planned

| Category                                       | 2019    | 2020      | 2021       | 2022       | 2023       | Lifetime    |
|------------------------------------------------|---------|-----------|------------|------------|------------|-------------|
| Total Program Cost (\$)                        | 715,145 | 2,981,049 | 7,652,974  | 4,661,476  | 3,581,578  | 19,592,223  |
| Total Program Participants (#)                 | 0       | 2,738     | 9,917      | 6,509      | 4,101      | 23,265      |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 4,960,666 | 22,601,069 | 12,667,811 | 5,081,335  |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 1,091,347 | 5,198,246  | 5,067,125  | 2,032,534  |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 411       | 1,414      | 1,025      | 563        |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 90        | 325        | 410        | 225        |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0         | 3,163      | 1,724      | 1,085      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0         | 728        | 690        | 434        |             |
| Total Net Lifetime Savings (kWh)               | 0       | 480,008   | 4,288,514  | 13,252,805 | 25,906,809 | 167,404,184 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 90        | 416        | 826        | 1,051      | 1,051       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0         | 728        | 1,417      | 1,851      | 1,851       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)

## North Carolina

Docket #: E-22, Sub 567

## RESIDENTIAL HOME ENERGY ASSESSMENT

2019-2023

476 kWh/yr Average Net Savings Per Participant

## Eligibility

- Active residential customer in the North Carolina living in a single-family detached or attached residence
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- · Work must be completed by a participating contractor

### Measures

- · Direct install lighting
- · Cool roof
- · Hot water ENERGY STAR appliances
- Faucets aerators
- · Low flow showerheads
- Heat pump tune-up and upgrade
- Duct sealing and duct Insulation

Enrolled **75** customers, **1%** of planned participation

Achieved net annual energy savings of **35,731 kWh/year, 1%** of planned energy savings



202

Ļ

Spent 37% of planned expenditures

TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)

02023

02022

@2021

2020

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime |
|------------------------------------------------|------|--------|---------|---------|---------|----------|
| Total Program Cost (\$)                        | 0    | 96,955 | 120,947 | 108,763 | 114,518 | 441,184  |
| Total Program Participants (#)                 | 0    | 17     | 32      | 18      | 8       | 75       |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 19,413 | 70,833  | 28,587  | 9,334   |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 4,271  | 16,292  | 11,435  | 3,733   |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 1      | 4       | 2       | 1       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 1       | 1       | 0       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 10      | 4       | 2       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 2       | 2       | 1       |          |
| Total Net Lifetime Savings (kWh)               | 0    | 850    | 13,203  | 37,620  | 72,655  | 446,780  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 1       | 2       | 2       | 2        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 2       | 4       | 5       | 5        |





Case #: PUR-2019-00201

## **RESIDENTIAL CUSTOMER ENGAGEMENT**

2020-2023

19 kWh/yr Average Net Savings Per Participant

## Eligibility

· Report recipients are selected to participate using a randomized control trial (RCT) experimental design

### Measures

· Monthly digital or paper home energy reports



planned participation

Achieved net annual energy savings of 15,635 MWh/year, 11% of planned energy savings

Spent 90% of planned expenditures - .

| Category                                       | 2019 | 2020    | 2021       | 2022       | 2023       | Lifetime   |
|------------------------------------------------|------|---------|------------|------------|------------|------------|
| Total Program Cost (\$)                        |      | 162,614 | 2,012,981  | 1,749,425  | 1,157,588  | 5,082,608  |
| Total Program Participants (#)                 |      | 0       | 286,456    | 263,463    | 256,468    | 806,387    |
| Total Gross Incremental Savings (kWh/yr)       |      | 0       | 42,102,743 | 38,940,500 | 33,218,144 |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0       | 3,368,219  | 6,619,885  | 5,647,085  |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0       | 0          | 0          | 0          |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0       | 0          | 0          | 0          |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0       | 0          | 0          | 0          |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0       | 0          | 0          | 0          |            |
| Total Net Lifetime Savings (kWh)               |      | 0       | 2,689,758  | 8,859,710  | 14,421,908 | 15,822,112 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0       | 0          | 0          | 0          | 0          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0       | 0          | 0          | 0          | 0          |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



 The SCC approved the Customer Engagement Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168).
 Following additional review, the program was refiled in Virginia at the end of 2019 and reapproved on July 30, 2020, as part of the DSM Phase VIII programs (Case No.PUR-2019-00201). As a result, the implementation schedule was delayed a year.

Case #: PUR-2019-00201

# RESIDENTIAL ELECTRIC VEHICLE ENERGY EFFICIENCY

2020-2023

104 kWh/yr Average Net Savings Per Participant

-

## Eligibility

Residential customers in single family or detached homes
 Customers must have WiFi service and be responsible for the electric bill

Measures

Rebate for Level 2 EV chargers

Enrolled 638 customers, 26% of planned participation

Achieved net annual energy savings of 66,407 kWh/year, 7% of planned energy savings

Spent 55% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023   | Lifetime |
|------------------------------------------------|------|--------|---------|---------|--------|----------|
| Total Program Cost (\$)                        |      | 14,517 | 282,385 | 277,166 | 83,768 | 657,836  |
| Total Program Participants (#)                 |      | 0      | 95      | 205     | 338    | 638      |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 12,379  | 27,255  | 43,375 |          |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 9,903   | 21,804  | 34,700 |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 0       | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 0       | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 0       | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 0       | 0      |          |
| Total Net Lifetime Savings (kWh)               |      | 0      | 1,898   | 20,914  | 68,389 | 664,223  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 0       | 0      | 0        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 0       | 0      | 0        |





Case #: PUR-2019-00201

## **RESIDENTIAL HOME RETROFIT**

2020-2023

2,061 kWh/yr Average Net Savings Per Participant

### Eligibility

- · Active residential customer in Virginia living in a single-family home or townhome
- · Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- · Walk-through audit of customer home, direct install measures, and recommendations for additional home energy improvements
- · Domestic hot water efficiency improvements
- · LED lamps
- · Tune-up of heat pump system and/or central AC
- · Smart thermostats
- · Attic and crawlspace insulation

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Enrolled 193 customers, 4% of planned participation

Achieved net annual energy savings of 397,731 kWh/year, 4% of planned energy savings



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Spent 50% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 56,887 | 865,549 | 852,714 | 904,306 | 2,679,455 |
| Total Program Participants (#)                 |      | 0      | 99      | 50      | 44      | 193       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 207,565 | 127,675 | 106,684 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 186,809 | 114,907 | 96,015  |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 68      | 30      | 27      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 62      | 27      | 24      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 75      | 44      | 35      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 68      | 40      | 31      |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 36,630  | 273,273 | 609,309 | 9,149,168 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 62      | 89      | 113     | 113       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 68      | 107     | 138     | 138       |









#### North Carolina Docket #: E-22, Sub 593 **RESIDENTIAL HOME RETROFIT** 2020-2023 0 kWh/yr Average Net Savings Per Participant Eligibility · Active residential customer in North Carolina living in a singlefamily home or townhome Enrolled 0 customers, 0% of planned Customer that is responsible for electric bill and either owns participation the home or is otherwise able to secure permission to complete measures · Work must be completed by a participating contractor Achieved net annual energy savings of Measures 0 kWh/year, 0% of planned energy savings · Walk-through audit of customer home, direct install measures, and recommendations for additional home energy improvements · Domestic hot water efficiency improvements · LED lamps Spent 41% of planned expenditures ...

- · Tune-up of heat pump system and/or central AC
- · Smart thermostats
- · Attic and crawlspace insulation

| Category                                       | 2019 | 2020 | 2021   | 2022   | 2023   | Lifetime |
|------------------------------------------------|------|------|--------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      | 35,738 | 48,397 | 50,642 | 134,778  |
| Total Program Participants (#)                 |      |      | 0      | 0      | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 0      | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 0      | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 0      | Ö      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 0      | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 0      | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0      | 0      |          |

Case #: PUR-2019-00201

# **RESIDENTIAL KITS**

2020-2023

74 kWh/yr Average Net Savings Per Participant

## Eligibility

- New customer accounts in Virginia
- · To receive more than the basic energy efficiency kit, customers must confirm their address and account status as well as answer a questionnaire

## Measures

- · Welcome kit with a tier 1 advanced power strip and educational insert informing customers how to manage their energy use
- · Low-flow showerheads
- Aerators · Water heater pipe insulation
- · LED lamps
- · Door and window weather stripping, door sweeps

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Enrolled 86,301 customers, 102% of planned participation

Achieved net annual energy savings of 6,363 MWh/year, 28% of planned energy savings

Spent 68% of planned expenditures ...

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023      | Lifetime   |
|------------------------------------------------|------|--------|-----------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      | 36,118 | 1,318,034 | 1,232,247 | 1,360,051 | 3,946,449  |
| Total Program Participants (#)                 |      | 0      | 28,113    | 26,790    | 31,398    | 86,301     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 3,442,999 | 3,439,997 | 3,721,439 |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 2,065,800 | 2,063,998 | 2,232,864 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 302       | 301       | 329       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 181       | 181       | 197       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 335       | 332       | 342       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 201       | 199       | 205       |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 576,373   | 3,532,892 | 8,542,827 | 36,505,583 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 181       | 362       | 560       | 560        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 201       | 400       | 606       | 606        |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



| - North Carolina -                                                                                                                                                                                                                                                                                                |              |                               |               |                                                                                                                                                                               |                 |           |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--|
| Docket #: E-22, Sub 592                                                                                                                                                                                                                                                                                           |              |                               |               |                                                                                                                                                                               |                 |           |  |
|                                                                                                                                                                                                                                                                                                                   | RES          | IDENTIA                       | LKITS         | 5                                                                                                                                                                             |                 |           |  |
|                                                                                                                                                                                                                                                                                                                   | 73 kWh/yr Av | 2020-2023<br>verage Net Savin | gs Per Partic | sipant                                                                                                                                                                        |                 |           |  |
| Eligibility                                                                                                                                                                                                                                                                                                       |              |                               |               |                                                                                                                                                                               |                 |           |  |
| <ul> <li>New customer accounts in North Carolina</li> <li>To receive more than the basic energy efficiency kit,<br/>customers must confirm their address and account status as<br/>well as answer a questionnaire</li> </ul>                                                                                      |              |                               |               | Enrolled <b>4,268</b> customers, <b>79%</b> of planned<br>participation<br>Achieved net annual energy savings of<br><b>313,404 kWh/year, 22%</b> of planned energy<br>savings |                 |           |  |
| Measures                                                                                                                                                                                                                                                                                                          | 4            |                               |               |                                                                                                                                                                               |                 |           |  |
| <ul> <li>Welcome kit with a tier 1 advanced power strip and educational<br/>insert informing customers how to manage their energy use</li> <li>Low-flow showerheads</li> <li>Aerators</li> <li>Water heater pipe insulation</li> <li>LED lamps</li> <li>Door and window weather stripping, door sweeps</li> </ul> |              |                               |               | Spent <b>55%</b> of planned                                                                                                                                                   | ed expenditures |           |  |
| Category                                                                                                                                                                                                                                                                                                          | 2019         | 2020                          | 202           | 1 2022                                                                                                                                                                        | 2023            | Lifetime  |  |
| Total Program Cost (\$)                                                                                                                                                                                                                                                                                           |              |                               | 57,116        | 69,433                                                                                                                                                                        | 72,060          | 198,609   |  |
| Total Program Participants (#)                                                                                                                                                                                                                                                                                    |              |                               | 1,264         | 1,453                                                                                                                                                                         | 1,551           | 4,268     |  |
| Total Gross Incremental Savings (kWh/yr)                                                                                                                                                                                                                                                                          |              |                               | 159,58        | 0 182,428                                                                                                                                                                     | 180,331         |           |  |
| Total Net Incremental Savings (kWh/yr)                                                                                                                                                                                                                                                                            |              |                               | 95,748        | 109,457                                                                                                                                                                       | 108,199         |           |  |
| Peak Gross Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                                                                                      |              |                               | 14            | 16                                                                                                                                                                            | 16              |           |  |
| Peak Net Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                                                                                        |              |                               | 8             | 10                                                                                                                                                                            | 10              |           |  |
| Peak Gross Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                                                                                      |              |                               | 15            | 18                                                                                                                                                                            | 16              |           |  |
| Peak Net Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                                                                                        |              |                               | 9             | 11                                                                                                                                                                            | 10              |           |  |
| Total Net Lifetime Savings (kWh)                                                                                                                                                                                                                                                                                  |              |                               | 28,571        | 170,570                                                                                                                                                                       | 415,902         | 1,796,097 |  |
| eak Net Lifetime Summer Demand Reduction (kW)                                                                                                                                                                                                                                                                     |              |                               | 8             | 18                                                                                                                                                                            | 28              | 28        |  |
| Peak Net Lifetime Winter Demand Reduction (kW)                                                                                                                                                                                                                                                                    |              |                               | 9             | 20                                                                                                                                                                            | 30              | 30        |  |

## TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



Case #: PUR-2019-00201

## **RESIDENTIAL MANUFACTURED HOUSING**

2020-2023

193 kWh/yr Average Net Savings Per Participant

### Eligibility

- · Customer must be a permanent resident of a manufactured home
- · Customers must be responsible for the electric bill and own the residence or are able to secure permission from the owner to perform the recommended improvements

### Measures

- · Home energy audit covering all energy systems and envelope of the manufactured home
- · Review of home energy audit between auditor and homeowner · Installation of the most comprehensive set of energy efficiency measures recommended by audit results
- · Installation of measures depends on homeowner agreement

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Enrolled 560 customers, 10% of planned participation

Achieved net annual energy savings of 108,033 kWh/year, 1% of planned energy savings



Spent 43% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 49,716 | 642,418 | 627,383 | 699,057 | 2,018,574 |
| Total Program Participants (#)                 |      | 0      | 3       | 3       | 554     | 560       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 916     | 310     | 118,811 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 824     | 279     | 106,930 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 0       | 45      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 0       | 40      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 0       | 51      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 0       | 46      |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 60      | 998     | 44,804  | 589,764   |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 0       | 40      | 40        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 0       | 46      | 46        |

#### TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



#### TOTAL SAVINGS BY BUILDING TYPE (MWH/YR)



Case #: PUR-2019-00201

## **RESIDENTIAL MULTIFAMILY**

2020-2023

204 kWh/yr Average Net Savings Per Participant

## Eligibility

- · Active residential customer in Virginia
- · Customer that is responsible for electric bill and either owns the property or is otherwise able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- · On-site energy assessment of tenant units
- · Pipe insulation
- · LED lamps
- · Tune-up of heat pump system and/or central AC
- · Installation of smart thermostats
- · Air sealing, duct sealing, attic insulation
- · Installation of ENERGY STAR® washers and dryers

Enrolled 2,916 customers, 8% of planned participation

Achieved net annual energy savings of 594,717 kWh/year, 2% of planned energy savings

Spent 36% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 28,940 | 629,586 | 768,978 | 774,765 | 2,202,269 |
| Total Program Participants (#)                 |      | 0      | 9       | 1,634   | 1,273   | 2,916     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 335     | 428,505 | 231,957 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 301     | 385,655 | 208,761 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 107     | 16      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 96      | 15      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 169     | 29      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 152     | 26      |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 15      | 157,793 | 633,329 | 5,014,980 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 96      | 111     | 111       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 152     | 178     | 178       |
|                                                |      |        |         |         |         |           |





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Case #: PUR-2019-00201

## **RESIDENTIAL NEW CONSTRUCTION**

2020-2023

1,931 kWh/yr Average Net Savings Per Participant

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### Eligibility

- New homes being constructed that are ENERGY STAR® certified
- Home must receive electric service on a residential rate schedule
- · Incentive recipient must be the homebuilder
- Eligible homes can be single family attached, single family detached, or two-over-two condos

### Measures

- · Shell improvements
- HVAC performance
- Lighting and appliances
- Domestic hot water measures

Enrolled **6,503** customers, **48%** of planned participation

Achieved net annual energy savings of 12,554 MWh/year, 66% of planned energy savings

Spent 52% of planned expenditures

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023       | Lifetime    |
|------------------------------------------------|------|--------|-----------|-----------|------------|-------------|
| Total Program Cost (\$)                        |      | 30,084 | 1,203,424 | 2,688,603 | 3,135,419  | 7,057,530   |
| Total Program Participants (#)                 |      | 0      | 1,018     | 2,560     | 2,925      | 6,503       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 1,971,437 | 5,129,363 | 7,329,239  |             |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 1,715,150 | 4,462,546 | 6,376,438  |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 883       | 2,285     | 3,004      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 769       | 1,988     | 2,613      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 343       | 970       | 1,675      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 298       | 844       | 1,458      |             |
| Total Net Lifetime Savings (kWh)               |      | 0      | 432,466   | 4,348,299 | 13,801,995 | 313,884,291 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 769       | 2,757     | 5,370      | 5,370       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 298       | 1,142     | 2,599      | 2,599       |





### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



## Case No. PUR-2019-00201

## **RESIDENTIAL THERMOSTAT PURCHASE AND WEATHERSMART**

2020-2023

205 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia living in a single family detached, attached, or manufactured home
- Customer must be responsible for electric bill and able to secure permission to complete measures
- Customer must have a heat pump to participate in the Purchase program component, and may have either a central air conditioner or heat pump to participate in the WeatherSmart program component

#### Measures

Smart

Thermostat Purchase

WeatherSmart

- · ENERGY STAR® certified smart thermostat
- Optimization of thermostat schedule and set points
- Monthly report with personalized energy-saving tips

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023      | Lifetime   |
|------------------------------------------------|------|--------|-----------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      | 99,671 | 1,002,656 | 1,146,575 | 660,213   | 2,909,116  |
| Total Program Participants (#)                 |      | 0      | 5,321     | 7,638     | 6,377     | 19,336     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 1,436,716 | 1,926,560 | 1,382,048 |            |
| - Total Net Incremental Savings (kWh/yr)       |      | 0      | 1,183,947 | 1,589,437 | 1,181,790 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 225       | 305       | 556       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 214       | 290       | 528       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 42        | 60        | 76        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 40        | 57        | 72        |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 473,495   | 2,334,127 | 5,366,471 | 23,406,046 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 214       | 290       | 528       | 528        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 40        | 57        | 72        | 72         |



508

321

230

874

1,206



### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)

Enrolled 19,336 customers, 86% of planned

Achieved net annual energy savings of

Spent 81% of planned expenditures

3,955 MWh/year, 42% of planned energy

participation

savings

...

| – North Carolina –<br>Docket #:E-22, SUB 595<br>RESIDENTIAL THE                                                                                                                                                                           | RMOST                                                                            | AT PURC                        | HASE           | AND WEATH                                             | HERSMA                          | ART          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------|----------------|-------------------------------------------------------|---------------------------------|--------------|
|                                                                                                                                                                                                                                           | 253 kWh/yr /                                                                     | 2021-2023<br>Average Net Savin | ngs Per Partic | pant                                                  |                                 |              |
| Eligibility                                                                                                                                                                                                                               |                                                                                  |                                |                |                                                       |                                 |              |
| <ul> <li>Active residential customer in North C.<br/>family detached, attached, or manufac</li> <li>Customer must be responsible for elec<br/>secure permission to complete measu</li> <li>Customer must have a heat pump to p</li> </ul> | arolina living in<br>tured home<br>ctric bill and al<br>res<br>participate in th | n a single<br>ble to<br>ne     |                | Enrolled <b>566</b> custome<br>participation          | ers, <b>39%</b> of pla          | nned         |
| Purchase program component, and m<br>air conditioner or heat pump to particip<br>WeatherSmart program component                                                                                                                           | ay nave eitner<br>pate in the                                                    | r a central                    | 4              | Achieved net annual<br>143,223 kWh/year, 2<br>savings | energy savings<br>4% of planned | of<br>energy |
| Measures                                                                                                                                                                                                                                  |                                                                                  |                                |                |                                                       |                                 |              |
| ENERGY STAR® certified smart therm     Optimization of thermostat schedule as     Monthly report with personalized energy                                                                                                                 | nostat<br>nd set points<br>gy-saving tips                                        |                                |                | Spent <b>45%</b> of planne                            | d expenditures                  |              |
| Category                                                                                                                                                                                                                                  | 2019                                                                             | 2020                           | 2021           | 2022                                                  | 2023                            | Lifetime     |
| Total Program Cost (\$)                                                                                                                                                                                                                   |                                                                                  |                                | 19,202         | 50,894                                                | 31,196                          | 101,292      |
| Total Program Participants (#)                                                                                                                                                                                                            |                                                                                  |                                | 71             | 265<br>80 592                                         | 230<br>69 185                   | 566          |

| Total Gross Incremental Savings (kWh/yr)       | 19,412 | 80,592 | 69,185  |         |
|------------------------------------------------|--------|--------|---------|---------|
| Total Net Incremental Savings (kWh/yr)         | 16,560 | 66,658 | 60,004  |         |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 9      | 16     | 40      |         |
| Peak Net Inc. Summer Demand Reduction (kW)     | 8      | 16     | 38      |         |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 1      | 2      | 3       |         |
| Peak Net Inc. Winter Demand Reduction (kW)     | 1      | 2      | 3       |         |
| Total Net Lifetime Savings (kWh)               | 5,128  | 45,894 | 149,420 | 761,311 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 8      | 16     | 38      | 38      |
| Peak Net Lifetime Winter Demand Reduction (kW) | 1      | 2      | 3       | 3       |
|                                                |        |        |         |         |







Case #: PUR-2020-00274

## **RESIDENTIAL SMART HOME**

2021-2023

421 kWh/yr Average Net Savings Per Participant

### Eligibility

- · Residential customers in Virginia
- · Cannot participate in DSM Phase VIII Residential Smart Thermostat (EE) Program
- · Customer must be responsible for the electric bill and either own the residence or secure permission from the owner

#### Measures

- · Smart plugs
- · Connected 9.5 W ENERGY STAR LED lamps
- · A19 Wi-Fi 8.8W color lamps (60W equivalent)
- · Downlight 7.2W BR30 color lamps (65W equivalent)
- · Smart home hub with entry / motion sensor
- · Smart home energy monitor (with solar option)
- · Smart thermostat with voice control and temperature / humidity sensor

500 participation

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Achieved net annual energy savings of 26,098 kWh/year, 0.18% of planned energy savings

Enrolled 62 customers, 1% of planned

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Spent 30% of planned expenditures

| Category                                       | 2019 | 2020 | 2021  | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|------|-------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 9,058 | 720,794 | 586,023 | 1,315,876 |
| Total Program Participants (#)                 |      |      | D     | 15      | 47      | 62        |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 8,087   | 22,616  |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 6,874   | 19,224  |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 1       | 1       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 0       | 1       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 3       | 1       |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 2       | 1       |           |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 1,511   | 15,248  | 164,290   |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 0       | 1       | 1         |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 2       | 3       | 3         |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



## TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



| - North Carolina -                                                                                                                                                                                                                                  |                                                                              |                                                                                    |               |                                           |                        |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------|-------------------------------------------|------------------------|----------|
| Docket #: E-22, Sub 618                                                                                                                                                                                                                             |                                                                              |                                                                                    |               |                                           |                        |          |
| R                                                                                                                                                                                                                                                   | ESIDEN                                                                       | ITIAL SM                                                                           | ART H         | IOME                                      |                        |          |
|                                                                                                                                                                                                                                                     |                                                                              | 2022-2023                                                                          |               |                                           |                        |          |
|                                                                                                                                                                                                                                                     | 288 kWh/yr A                                                                 | verage Net Savir                                                                   | ngs Per Parti | cipant                                    |                        |          |
| Eligibility                                                                                                                                                                                                                                         |                                                                              |                                                                                    |               |                                           |                        |          |
| <ul> <li>Residential customers in North Carolir</li> <li>Cannot participate in DSM Phase VII I<br/>Thermostat (EE) Program</li> <li>Customer must be responsible for the<br/>own the residence or secure permission</li> </ul>                      | na<br>Residential Sm<br>electric bill and<br>on from the ow                  | art<br>d either<br>ner                                                             |               | Enrolled <b>2</b> customers participation | , <b>0.26%</b> of plan | ned      |
| Measures                                                                                                                                                                                                                                            | 4                                                                            | Achieved net annual energy savings of <b>577 kWh/year, 0.06%</b> of planned energy |               |                                           |                        |          |
| Connected 9.5 W ENERGY STAR LEI<br>A19 Wi-Fi 8.8W color lamps (60W equ<br>Downlight 7.2W BR30 color lamps (65<br>Smart home hub with entry / motion se<br>Smart home energy monitor (with sola<br>Smart thermostat with voice control and<br>sensor | D lamps<br>livalent)<br>W equivalent)<br>ensor<br>r option)<br>d temperature | / humidity                                                                         |               | Spent <b>27%</b> of planned               | d expenditures         |          |
| Category                                                                                                                                                                                                                                            | 2019                                                                         | 2020                                                                               | 2021          | 2022                                      | 2023                   | Lifetime |
| Total Program Cost (\$)                                                                                                                                                                                                                             |                                                                              |                                                                                    |               | 16,505                                    | 35,651                 | 52,155   |
| Total Program Participants (#)                                                                                                                                                                                                                      |                                                                              |                                                                                    |               | 1                                         | 1                      | 2        |
| Total Gross Incremental Savings (kWh/yr)                                                                                                                                                                                                            |                                                                              |                                                                                    |               | 383                                       | 295                    |          |
| Total Net Incremental Savings (kWh/yr)                                                                                                                                                                                                              |                                                                              |                                                                                    |               | 326                                       | 251                    |          |
| Peak Gross Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                        |                                                                              |                                                                                    |               | 0                                         | 0                      |          |
| Peak Net Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                          |                                                                              |                                                                                    |               | 0                                         | 0                      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                        |                                                                              |                                                                                    |               | 0                                         | 0                      |          |
| Peak Net Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                          |                                                                              |                                                                                    |               | 0                                         | 0                      |          |
| Total Net Lifetime Savings (kWh)                                                                                                                                                                                                                    |                                                                              |                                                                                    |               | 36                                        | 399                    | 3,244    |
| ak Net Lifetime Summer Demand Reduction (kW)                                                                                                                                                                                                        |                                                                              |                                                                                    |               | · 0                                       | 0                      | 0        |
| Peak Net Lifetime Winter Demand Reduction (kW)                                                                                                                                                                                                      |                                                                              |                                                                                    |               | 0                                         | 0                      | 0        |



0.07

0.05

Smart Plugs

Smart Plugs (2 pack)

Smart Thermostat Premium

Smart Home Hub with Entry/Motion Sensor



Case #: PUR-2020-00274

## **RESIDENTIAL VIRTUAL ENERGY AUDIT**

2021-2023

Door Weather-stripping

Door Sweep

467 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia
- Customer that is responsible for electric bill and either own the home or is otherwise able to secure permission and authorization to complete the rebate submission

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#### Measures

- · Low-flow showerheads and aerators · LED lamp upgrades
- · Water heat pipe insulation
- · Window Weather-stripping
  - Outlet / Switch Gaskets · Caulking
- Outlet / Switch Gaskets Cooling and Elec Heat Pump
- Tier 1 Smart Strip

2019 2020 2021 2022 2023 Lifetime Category Total Program Cost (\$) 4,465 1,496,704 665 100 2,166,270 Total Program Participants (#) 0 2,149 8,044 10,193 Total Gross Incremental Savings (kWh/yr) 0 1,972,641 5,960,092 Total Net Incremental Savings (kWh/yr) 0 1.183.584 3,576,055 Peak Gross Inc. Summer Demand Reduction (kW) 0 164 574 Peak Net Inc. Summer Demand Reduction (kW) 0 98 344 Peak Gross Inc. Winter Demand Reduction (kW) 0 269 942 Peak Net Inc. Winter Demand Reduction (kW) 0 162 565 Total Net Lifetime Savings (kWh) 0 360,263 2,930,827 48,672,600 Peak Net Lifetime Summer Demand Reduction (kW) 0 98 443 443 Peak Net Lifetime Winter Demand Reduction (kW) 0 162 727 727

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



Enrolled 10,193 customers, 10% of planned

Achieved net annual energy savings of

Spent 29% of planned expenditures

4,760 MWh/year, 15% of planned energy

participation

savings

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| — North Carolina -                                                                                                                                                                                        |                                                                |                  |              |                                                       |                                  |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------|--------------|-------------------------------------------------------|----------------------------------|--------------|
| Docket #: E-22, Sub 619                                                                                                                                                                                   |                                                                |                  |              |                                                       |                                  |              |
| RESID                                                                                                                                                                                                     | ENTIAL                                                         |                  | ENE          | RGY AUDIT                                             |                                  |              |
| Eligibility                                                                                                                                                                                               | 572 KWN/YFA                                                    | verage Net Savir | igs Per Part | icipant                                               |                                  |              |
| <ul> <li>Active residential customer in North C</li> <li>Customer that is responsible for elect<br/>home or is otherwise able to secure p<br/>authorization to complete the rebate s</li> </ul>           | Carolina<br>ric bill and eithe<br>permission and<br>submission | er own the       |              | Enrolled <b>416</b> custom participation              | ers, <b>6%</b> of plan           | ned          |
| Measures  • Low-flow showerheads and aerators                                                                                                                                                             | • I ED lamp ur                                                 | ogrades          | Ŧ            | Achieved net annual<br>237,941 kWh/year, 1<br>savings | energy savings<br>12% of planned | of<br>energy |
| <ul> <li>Water heat pipe insulation</li> <li>Window Weather-stripping</li> <li>Outlet / Switch Gaskets</li> <li>Outlet / Switch Gaskets Cooling and Elec Heat Pump</li> <li>Tier 1 Smart Strip</li> </ul> |                                                                |                  |              | Spent 32% of planne                                   | ed expenditures                  |              |
| Category                                                                                                                                                                                                  | 2019                                                           | 2020             | 202          | 1 2022                                                | 2023                             | Lifetime     |
| Total Program Cost (\$)                                                                                                                                                                                   |                                                                |                  |              | 15,492                                                | 85,520                           | 101,012      |



Total Program Participants (#)

Total Net Lifetime Savings (kWh)

Total Gross Incremental Savings (kWh/yr)

Peak Gross Inc. Summer Demand Reduction (kW)

Peak Net Inc. Summer Demand Reduction (kW)

Peak Gross Inc. Winter Demand Reduction (kW)

Peak Net Lifetime Summer Demand Reduction (kW)

Peak Net Lifetime Winter Demand Reduction (kW)

Peak Net Inc. Winter Demand Reduction (kW)

Total Net Incremental Savings (kWh/yr)



39

40,749

24,450

3

2

6

3

7,869

2

3

377

355,820

213,492

34

20

52

31

94,162

22

35

416

2,382,950

22

35



Case #: PUR-2020-00274

## **RESIDENTIAL WATER SAVINGS**

2021-2023

1,279 kWh/yr Average Net Savings Per Participant

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### Eligibility

- Residential customers in Virginia who reside in single-family homes
- Customer must be responsible for the electric bill and either own the residence or are able to secure permission from the owner to perform the recommended improvements

### Measures

- Domestic Heat Pump Water Heater
- Variable Speed Pool Pumps

Enrolled **430** customers, **15%** of planned participation

Achieved net annual energy savings of **550,183 kWh/year, 10%** of planned energy savings

Spent 33% of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 10,197 | 256,790 | 347,383 | 614,369   |
| Total Program Participants (#)                 |      |      | 0      | 62      | 368     | 430       |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 97,694  | 513,620 |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 87,925  | 462,258 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 12      | 89      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 11      | 80      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 16      | 103     |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 14      | 92      |           |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 11,881  | 328,722 | 6,282,244 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 11      | 91      | 91        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 14      | 106     | 106       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)

### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



| - North Carolina -                                                                                                                                                                                           |                                                                     |                                    |          |                                                       |                                   |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------|----------|-------------------------------------------------------|-----------------------------------|--------------|
| Docket #: E-22, Sub 620                                                                                                                                                                                      |                                                                     |                                    |          |                                                       |                                   |              |
| RE                                                                                                                                                                                                           | SIDENT                                                              | TAL WAT<br>2022-2023               | ER SA    | VINGS                                                 |                                   |              |
| Eligibility                                                                                                                                                                                                  | 1,130 KW1/yr                                                        | Average Net Savi                   | ngsreira | lopant                                                |                                   |              |
| <ul> <li>Residential customers in North Carolir<br/>family homes</li> <li>Customer must be responsible for the<br/>own the residence or are able to secur<br/>owner to perform the recommended in</li> </ul> | na who reside<br>electric bill an<br>re permission f<br>nprovements | in single-<br>d either<br>from the | ***      | Enrolled 11 customer<br>participation                 | rs, <b>6%</b> of planne           | ed           |
| Measures  • Domestic Heat Pump Water Heater Visite Press Press                                                                                                                                               |                                                                     |                                    | 4        | Achieved net annual<br>12,716 kWh/year, 4%<br>savings | energy savings<br>% of planned en | e of<br>ergy |
| • variable Speed Pool Pumps                                                                                                                                                                                  |                                                                     |                                    |          | Spent 25% of planne                                   | d expenditures                    |              |
| Category                                                                                                                                                                                                     | 2019                                                                | 2020                               | 202      | 1 2022                                                | 2023                              | Lifetime     |
| Total Program Cost (\$)                                                                                                                                                                                      |                                                                     |                                    |          | 5,048                                                 | 16,481                            | 21,529       |

| Total Program Cost (\$)                        | 5,048 | 10,481 | 21,529  |
|------------------------------------------------|-------|--------|---------|
| Total Program Participants (#)                 | 0     | 11     | 11      |
| Total Gross Incremental Savings (kWh/yr)       | 0     | 14,129 |         |
| Total Net Incremental Savings (kWh/yr)         | 0     | 12,716 |         |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0     | 3      |         |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0     | 2      |         |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0     | 3      |         |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0     | 3      |         |
| Total Net Lifetime Savings (kWh)               | 0     | 4,397  | 145,034 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0     | 2      | 2       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0     | 3      | 3       |
|                                                |       |        |         |











## **ENERGY EFFICIENCY – INCOME AND AGE QUALIFYING**

| Table 24   | A stire in same |            | alle da a an ana | -         |                  |
|------------|-----------------|------------|------------------|-----------|------------------|
| Table 3-1. | Active income   | and age qu | lainying energy  | emiciency | programs in 2023 |

| DSM Phase | Acronym | Program                                   | VA | NC |
|-----------|---------|-------------------------------------------|----|----|
| VIII      | RHVC    | Residential IAQ HVAC Health and Safety    | ~  |    |
| IV        | EALS    | IAQ Solar                                 | 1  |    |
| iX        | EAL4    | Residential IAQ Energy Efficiency         | 1  | ~  |
| х         | RIAQ    | Residential IAQ Home Improvement Enhanced | 1  |    |

Figure 5-1 and Figure 5-2 show the cumulative count of residential income and age qualifying program participation and gross annualized energy savings in the two states, for the active programs, at the county level, through December 31, 2022. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation, in descending order, are Henrico, Richmond City, and Hampton City. In North Carolina, Halifax, Martin, and Washington counties have the highest participation.

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Richmond City, Henrico, and Chesapeake City. In North Carolina, Halifax, Washington, and Martin counties have the most energy savings.



Figure 3-1. Virginia and North Carolina Income and Age Qualifying Program Participation, by County

- Participants
- A. Less than 10
- B. 10 100
- C. 100 1,000
- D. 1,000 3,000
- E. More than 3,000



Figure 3-2. Virginia and North Carolina Income and Age Qualifying Program Gross Annualized Energy Savings, by County

### Gross Total Electric Impact

- A. Less than 100 MWh/year
- B. 100 500 MWh/year
- C. 500 MWh/year 1 GWh/year
- D. 1 5 GWh/year


#### Case #: PUR-2019-00201

# **RESIDENTIAL HVAC HEALTH AND SAFETY**

2020-2023

234 kWh/yr Average Net Savings Per Participant

### Eligibility

- · Current or new Dominion customer on residential rate schedule
- · Customer total household income must not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income (whichever is greater)
- · Customers over 60 years of age with a total household income that does not exceed 120% of the Virginia Median Income also qualify
- · Both owner-occupied and renter-occupied households are eligible

#### Measures

- · HVAC replacement and upgrade
- HVAC improvement
- HVAC tune-up
- · Thermostat replacement
- · Duct sealing, insulation, repair, and replacement
- · Wall and floor insulation repair and upgrade
- · Comprehensive air sealing
- · Health and safety

Enrolled 10,715 customers, 41% of planned participation

Achieved net annual energy savings of 2,509 MWh/year, 14% of planned energy savings

Spent 95% of planned expenditures

TOTAL SAVINGS BY BUILDING TYPE

TOP 5 (MWH/YR)

| riounti una caloty                             |      |        |           |            |           |            |
|------------------------------------------------|------|--------|-----------|------------|-----------|------------|
| Category                                       | 2019 | 2020   | 2021      | 2022       | 2023      | Lifetime   |
| Total Program Cost (\$)                        |      | 49,722 | 9,094,648 | 12,192,181 | 9,682,714 | 31,019,265 |
| Total Program Participants (#)                 |      | 0      | 3,361     | 3,661      | 3,693     | 10,715     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 1,341,418 | 999,178    | 796,194   |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 1,073,134 | 799,342    | 636,955   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 200       | 194        | 141       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 160       | 155        | 113       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 295       | 296        | 247       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 236       | 237        | 197       |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 226,299   | 1,658,791  | 3,807,629 | 33,902,234 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 160       | 315        | 428       | 428        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 236       | 473        | 670       | 670        |





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### Case #: PUR-2020-00274

# INCOME AND AGE QUALIFYING SOLAR PROGRAM

2021-2023

5,007 kWh/yr Average Net Savings Per Participant

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### Eligibility

- Program participants must meet certain income, age, or disability requirements
- Program participants must have participated in a Dominion income and age qualifying program

### Measures

Installation of solar photovoltaic panels mounted on the roof of the residence or on a pole on the customer's property

Enrolled **137** customers, **12%** of planned participation

Achieved net annual energy savings of 685,945 kWh/year, 17% of planned energy savings

Spent 23% of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022    | 2023      | Lifetime   |
|------------------------------------------------|------|------|--------|---------|-----------|------------|
| Total Program Cost (\$)                        |      |      | 10,963 | 196,159 | 4,633,026 | 4,840,149  |
| Total Program Participants (#)                 |      |      | 0      | 7       | 130       | 137        |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 34,559  | 822,872   |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 27,647  | 658,298   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | D      | 12      | 296       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 10      | 237       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0       | 0         |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0       | 0         |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 1,828   | 315,405   | 17,150,757 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 10      | 247       | 247        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0       | 0         | 0          |

### NUMBER OF PARTICIPANTS BY IAQ PROGRAM



#### Virginia Case #: PUR-2020-00274 RESIDENTIAL INCOME AND AGE QUALIFYING ENERGY EFFICIENCY 2021-2023 579 kWh/yr Average Net Savings Per Participant Eligibility Income qualifying customers must have an income ≤ 60% of Virginia median income Enrolled 9,933 customers, 51% of planned ----· Age qualifying residential customers must be ≥ 60 years of participation age and have an income ≤ 120% of Virginia median income · Qualified individuals must live in single-family homes, multifamily homes, or mobile homes Achieved net annual energy savings of Measures Ļ 5,749 MWh/year, 560% of planned energy · LED lamps savings · Energy-saving showerheads · Faucet aerators · Pipe or Water Tank wrap insulation Spent 95% of planned expenditures · Added attic or floor insulation -· Air or Duct sealing · AC or Heat Pipe Tune-up · Health and Safety measures

| Category                                       | 2019 | 2020 | 2021   | 2022      | 2023      | Lifetime    |
|------------------------------------------------|------|------|--------|-----------|-----------|-------------|
| Total Program Cost (\$)                        |      |      | 15,696 | 5,853,130 | 8,094,395 | 13,963,221  |
| Total Program Participants (#)                 |      |      | 0      | 4,782     | 5,151     | 9,933       |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 3,096,191 | 4,090,052 |             |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 2,476,953 | 3,272,042 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 689       | 1,139     |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 551       | 912       |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 1,714     | 2,258     |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 1,371     | 1,806     |             |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 874,218   | 4,511,223 | 124,071,140 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 551       | 1,463     | 1,463       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 1,371     | 3,177     | 3,177       |







| — North Carolina –                                                                                                                                                                                                                                                                                                       |              |                  |              |                                                                                                              |                |           |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|--------------|--------------------------------------------------------------------------------------------------------------|----------------|-----------|--|
| Docket #: E-22, SUB 608                                                                                                                                                                                                                                                                                                  |              |                  |              |                                                                                                              |                |           |  |
| RESIDENTIAL INCOM                                                                                                                                                                                                                                                                                                        | EANDA        |                  | LIFYIN       | NG ENERGY                                                                                                    | EFFICIE        | ENCY      |  |
|                                                                                                                                                                                                                                                                                                                          | 1.652 kWh/vr | Average Net Savi | ngs Per Part | icipant                                                                                                      |                |           |  |
| Eligibility                                                                                                                                                                                                                                                                                                              |              |                  |              |                                                                                                              |                |           |  |
| <ul> <li>Customer must have a total household income of &lt; 200% of federal poverty guidelines, or be receiving assistance payments under the Work First or Supplemental Security Income Programs; or</li> <li>Customer is ≥ 60 years with a total household income ≤ 250% of the federal poverty guidelines</li> </ul> |              |                  |              | Enrolled <b>40</b> customers, <b>3%</b> of planned<br>participation<br>Achieved net annual energy savings of |                |           |  |
|                                                                                                                                                                                                                                                                                                                          |              |                  |              |                                                                                                              |                |           |  |
| <ul> <li>Pipe or Water Tank wrap insulation</li> <li>Added attic or floor insulation</li> <li>Air or Duct sealing</li> <li>AC or Heat Pipe Tune-up</li> <li>Health and Safety measures</li> </ul>                                                                                                                        |              |                  |              | Spent 34% of planned                                                                                         | l expenditures |           |  |
| Category                                                                                                                                                                                                                                                                                                                 | 2019         | 2020             | 2021         | 2022                                                                                                         | 2023           | Lifetime  |  |
| Total Program Cost (\$)                                                                                                                                                                                                                                                                                                  |              |                  |              | 141,404                                                                                                      | 116,007        | 257,411   |  |
| Total Program Participants (#)                                                                                                                                                                                                                                                                                           |              |                  |              | 26                                                                                                           | 14             | 40        |  |
| Total Gross Incremental Savings (kWh/yr)                                                                                                                                                                                                                                                                                 |              |                  |              | 47,257                                                                                                       | 35,341         |           |  |
| Total Net Incremental Savings (kWh/yr)                                                                                                                                                                                                                                                                                   |              |                  |              | 37,806                                                                                                       | 28,273         |           |  |
| Peak Gross Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                                                                                             |              |                  |              | 16                                                                                                           | 8              |           |  |
| Peak Net Inc. Summer Demand Reduction (kW)                                                                                                                                                                                                                                                                               |              |                  |              | 12                                                                                                           | 6              |           |  |
| Peak Gross Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                                                                                             |              |                  |              | 27                                                                                                           | 24             |           |  |
| Peak Net Inc. Winter Demand Reduction (kW)                                                                                                                                                                                                                                                                               |              |                  |              | 21                                                                                                           | 19             |           |  |
| Total Net Lifetime Savings (kWh)                                                                                                                                                                                                                                                                                         |              |                  |              | 15,764                                                                                                       | 68,848         | 1,289,312 |  |
| eak Net Lifetime Summer Demand Reduction (kW)                                                                                                                                                                                                                                                                            |              |                  |              | 12                                                                                                           | 19             | 19        |  |
| Peak Net Lifetime Winter Demand Reduction (kW)                                                                                                                                                                                                                                                                           |              |                  |              | 21                                                                                                           | 41             | 41        |  |









### Case #: PUR-2021-00247

### RESIDENTIAL INCOME AND AGE QUALIFYING HOME IMPROVEMENT ENHANCED

2022-2023

411 kWh/yr Average Net Savings Per Participant

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### Eligibility

- Income qualifying customers must have an income ≤ 60% of Virginia median income, or 80% of the local area median income, whichever is greater
- Age qualifying residential customers must be ≥ 60 years of age and have an income ≤ 120% of Virginia median income
- Qualified individuals must live in single-family homes,
- multifamily homes, or mobile homes

### Measures

- · LED lamps
- · ENERGY STAR washers and dryers
- ENERGY STAR dishwashers
- Domestic heat pump water heaters
- Window film
- · Window replacements
- · Door replacements

Enrolled **4** customers, **1%** of planned participation

Achieved net annual energy savings of 1,644 kWh/year, 5% of planned energy savings

Spent 44% of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023    | Lifetime |
|------------------------------------------------|------|------|------|-------|---------|----------|
| Total Program Cost (\$)                        |      |      |      | 9,466 | 556,644 | 566,110  |
| Total Program Participants (#)                 |      |      |      | 0     | 4       | 4        |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 1,661   |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 1,644   |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 1       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 1       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 1       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 1       |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 271     | 32,890   |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 1       | 1        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 1       | 1        |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)









#### Table 4-1. Active non-residential energy efficiency programs in 2023

| DSM Phase | Acronym | Program                              | VA           | NC |
|-----------|---------|--------------------------------------|--------------|----|
| VII       | CHV3    | Heating and Cooling Efficiency       | 1            | ~  |
| VII       | CLT3    | Lighting Systems & Controls          | ✓            | ~  |
| Х         | CLT4    | Lighting Systems & Controls          | ✓            | ~  |
|           | CTSO    | Office                               | 1            | 1  |
| VII       | CTSM    | Manufacturing                        | 1            | ~  |
|           | CSW2    | Window Film                          | 1            | ~  |
|           | CEEP    | Midstream Energy Efficiency Products | 1            |    |
| Van       | CMFP    | Multifamily                          | 1            |    |
| VIII      | CNCR    | New Construction                     | $\checkmark$ | ~  |
|           | SBI2    | Small Business Improvement Enhanced  | 1            | ~  |
|           | CAGR    | Agricultural Energy Efficiency       | 1            |    |
|           | CBAS    | Building Automation System           | 1            | 1  |
| IX        | CBOT    | Building Optimization                | 1            |    |
|           | CENG    | Engagement                           | 1            | ~  |
|           | CNR2    | Prescriptive Enhanced                | $\checkmark$ | ~  |

Figure 4-1 and Figure 4-2 show the cumulative count of non-residential general products and services program participation and gross annualized energy savings in the two states, for the active programs, at the county level, through December 31, 2022. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation in descending order, are Fairfax, Henrico, and Virginia Beach City. In North Carolina, Dare, Currituck, and Halifax counties have the highest participation.

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Loudoun, and Henrico. In North Carolina, Dare, Halifax, and Martin counties have the most energy savings.



Figure 4-1. Virginia and North Carolina Non-Residential General Products and Services Program Participation, by County

Participants A. Less than 10 B. 10 - 100

C. 100 - 1,000



Figure 4-2. Virginia and North Carolina Non-Residential General Products and Services Program Gross Annualized Energy Savings, by County

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Gross Total Electric Impact A. Less than 100 MWh/year

B. 100 - 500 MWh/year

- C. 500 MWh/year 1 GWh/year
- D. 1 5 GWh/year

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e E. More than 5 GWh/year

### Case #: PUE-2018-00168

# NON-RESIDENTIAL HEATING AND COOLING EFFICIENCY

2019-2023

136,890 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt
   by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- · Unitary and split AC units
- · Air-source and ground-source heat pumps
- · Packaged terminal AC and heat pumps
- · Variable refrigerant flow units
- · Water and air-cooled chillers
- · Variable frequency drives for HVAC applications
- Economizers

| Achieved net annual | energy savings of |
|---------------------|-------------------|

participation

20,670 MWh/year, 56% of planned energy savings

Enrolled 151 customers, 5% of planned



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Spent 67% of planned expenditures

| Category                                       | 2019    | 2020      | 2021      | 2022       | 2023       | Lifetime    |
|------------------------------------------------|---------|-----------|-----------|------------|------------|-------------|
| Total Program Cost (\$)                        | 342,194 | 723,971   | 582,157   | 1,173,390  | 2,990,710  | 5,812,422   |
| Total Program Participants (#)                 | 0       | 30        | 44        | 51         | 26         | 151         |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 2,352,639 | 527,840   | 10,356,854 | 16,291,782 |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 1,646,848 | 369,488   | 7,249,798  | 11,404,247 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 408       | 59        | 2,809      | 2,230      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 286       | 41        | 1,966      | 1,561      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0         | 29        | 168        | 21         |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0         | 20        | 118        | 15         |             |
| Total Net Lifetime Savings (kWh)               | 0       | 563,495   | 2,375,478 | 6,264,367  | 20,029,396 | 310,076,943 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 286       | 327       | 2,293      | 3,854      | 3,854       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0         | 20        | 138        | 153        | 153         |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)

#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



### Docket #: E-22, Sub 574

# NON-RESIDENTIAL HEATING AND COOLING EFFICIENCY

2019-2023

49,877 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt
   by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- · Unitary and split AC units
- · Air-source and ground-source heat pumps
- · Packaged terminal AC and heat pumps
- · Variable refrigerant flow units
- · Water and air-cooled chillers
- · Variable frequency drives for HVAC applications
- Economizers

Achieved net annual energy savings of

participation

99,753 kWh/year, 5% of planned energy savings

Enrolled 2 customers, 1% of planned

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Spent 30% of planned expenditures

| Category                                       | 2019 | 2020   | 2021   | 2022    | 2023   | Lifetime  |
|------------------------------------------------|------|--------|--------|---------|--------|-----------|
| Total Program Cost (\$)                        | 0    | 30,873 | 33,730 | 43,699  | 34,208 | 142,510   |
| Total Program Participants (#)                 | 0    | 0      | 1      | 1       | 0      | 2         |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 2,946  | 139,559 | 0      |           |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 2,062  | 97,691  | 0      |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 1      | 18      | 0      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 12      | 0      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 1      | 0       | 0      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0       | 0      |           |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 813    | 33,876  | 0      | 1,496,351 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 13      | 0      | 13        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0       | 0      | 0         |

#### TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)





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#### Case #: PUE-2018-00168

# NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2019-2023

41,803 kWh/yr Average Net Savings Per Participant

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### Eligibility

- · All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- · Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

### Measures

- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- · LED lamps
- · Occupancy sensors

Enrolled 1,056 customers, 53% of planned participation

Achieved net annual energy savings of 44,144 MWh/year, 110% of planned energy savings



Spent 136% of planned expenditures

| Category                                       | 2019    | 2020       | 2021       | 2022       | 2023        | Lifetime    |
|------------------------------------------------|---------|------------|------------|------------|-------------|-------------|
| Total Program Cost (\$)                        | 592,373 | 3,989,872  | 3,537,467  | 2,749,190  | 1,413,563   | 12,282,466  |
| Total Program Participants (#)                 | 0       | 406        | 388        | 193        | 69          | 1,056       |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 29,189,250 | 22,546,913 | 16,583,111 | 12,744,620  |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 16,287,601 | 12,581,177 | 9,253,376  | 6,021,833   |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 4,020      | 3,195      | 2,582      | 2,241       |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 1,845      | 1,466      | 1,185      | 1,028       |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0          | 2,488      | 1,773      | 1,276       |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0          | 1,108      | 790        | 569         |             |
| Total Net Lifetime Savings (kWh)               | 0       | 6,689,038  | 29,597,437 | 62,477,470 | 106,338,904 | 449,395,314 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 1,845      | 3,312      | 4,497      | 5,525       | 5,525       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0          | 1,108      | 1,898      | 2,467       | 2,467       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)





### Docket #: E-22, Sub 573

# **NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS**

2019-2023

39,899 kWh/yr Average Net Savings Per Participant

### Eligibility

- · All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- · Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- T8 lamps with electronic ballast
- · High-performance T8 lamps
- T5 lamps with electronic ballast
- · LED lamps
- · Occupancy sensors

Enrolled 29 customers, 27% of planned participation

Achieved net annual energy savings of 1,157 MWh/year, 55% of planned energy savings

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Spent 114% of planned expenditures

| Category                                       | 2019 | 2020    | 2021    | 2022      | 2023      | Lifetime   |
|------------------------------------------------|------|---------|---------|-----------|-----------|------------|
| Total Program Cost (\$)                        | 0    | 160,883 | 92,989  | 209,012   | 66,851    | 529,735    |
| Total Program Participants (#)                 | 0    | 9       | 5       | 12        | 3         | 29         |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 111,813 | 189,982 | 1,478,591 | 346,305   |            |
| Total Net Incremental Savings (kWh/yr)         | 0    | 62,392  | 106,010 | 825,054   | 163,629   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 5       | 41      | 323       | 79        |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 2       | 19      | 148       | 36        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0       | 17      | 108       | 33        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0       | 8       | 48        | 15        |            |
| Total Net Lifetime Savings (kWh)               | D    | 31,882  | 145,889 | 504,158   | 1,648,950 | 11,767,208 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 2       | 21      | 170       | 206       | 206        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0       | 8       | 56        | 70        | 70         |

#### TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)





### Case #: PUR-2021-00247

# NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2022-2023

72,385 kWh/yr Average Net Savings Per Participant

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#### Eligibility

- All non-residential customers are eligible except those exempt
   by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by participating contractor

#### Measures

- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- · LED lamps
- Occupancy sensors

Enrolled **259** customers, **28%** of planned participation

Achieved net annual energy savings of 18,748 MWh/year, 30% of planned energy savings

Spent 34% of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023       | Lifetime    |
|------------------------------------------------|------|------|------|-------|------------|-------------|
| Total Program Cost (\$)                        |      |      |      | 3,222 | 3,313,015  | 3,316,237   |
| Total Program Participants (#)                 |      |      |      | 0     | 259        | 259         |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 20,830,777 |             |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 18,747,700 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 3,478      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 3,130      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 2,153      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 1,938      |             |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 3,874,759  | 190,655,650 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 3,130      | 3,130       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 1,938      | 1,938       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)

TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)





### Docket #: E-22, Sub 666

# NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2022-2023

116,646 kWh/yr Average Net Savings Per Participant

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### Eligibility

All non-residential customers are eligible except those exempt
 by statute, special contract, or opt out

- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by participating contractor

#### Measures

- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- · LED lamps
- Occupancy sensors

Enrolled **5** customers, **9%** of planned participation

Achieved net annual energy savings of **583,232 kWh/year, 15%** of planned energy savings

Spent 29% of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022 | 2023    | Lifetime  |
|------------------------------------------------|------|------|------|------|---------|-----------|
| Total Program Cost (\$)                        |      |      |      | 0    | 115,660 | 115,660   |
| Total Program Participants (#)                 |      |      |      | 0    | 5       | 5         |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0    | 648,036 |           |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0    | 583,232 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0    | 123     |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0    | 111     |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0    | 59      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0    | 53      |           |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0    | 100,758 | 5,930,613 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0    | 111     | 111       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0    | 53      | 53        |

#### TOTAL SAVING BY MEASURE TYPE (MWH/YR)





Case #: PUE-2018-00168

### NON-RESIDENTIAL OFFICE

2019-2023

68,084 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- Temperature setback
- Static pressure reset
- · Reduce lighting schedule
- · VAV minimum flow reduction
- · HVAC unit scheduling
- · Dual enthalpy economizer
- · Condensing water temp reset
- Discharge air temp reset



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participation

savings

Spent 59% of planned expenditures

Enrolled 167 customers, 47% of planned

Achieved net annual energy savings of

11,370 MWh/year, 54% of planned energy

| Category                                       | 2019    | 2020    | 2021      | 2022      | 2023       | Lifetime   |
|------------------------------------------------|---------|---------|-----------|-----------|------------|------------|
| Total Program Cost (\$)                        | 405,507 | 408,837 | 804,161   | 477,980   | 1,137,077  | 3,233,563  |
| Total Program Participants (#)                 | 0       | 6       | 59        | 16        | 86         | 167        |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 131,417 | 1,203,577 | 4,217,101 | 7,081,212  |            |
| Total Net Incremental Savings (kWh/yr)         | 0       | 118,275 | 1,083,219 | 3,795,391 | 6,373,091  |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 0       | 0         | 69        | 19         |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 0       | 0         | 62        | 18         |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0       | 0         | 41        | 14         |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0       | 0         | 37        | 13         |            |
| Total Net Lifetime Savings (kWh)               | 0       | 7,343   | 1,088,685 | 2,745,849 | 10,570,872 | 79,610,786 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 0       | 0         | 62        | 79         | 79         |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0       | 0         | 37        | 50         | 50         |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



Docket #: E-22, Sub 572

### NON-RESIDENTIAL OFFICE

2019-2023

28,172 kWh/yr Average Net Savings Per Participant

#### Eligibility

· All non-residential customers are eligible except those exempt by statute, special contract, or opt out

- · Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- Temperature setback
- Static pressure reset
- · Reduce lighting schedule
- · VAV minimum flow reduction
- · HVAC unit scheduling
- · Dual enthalpy economizer
- · Condensing water temp reset

Enrolled 3 customers, 15% of planned -0.0 participation

> Achieved net annual energy savings of 84,516 kWh/year, 7% of planned energy savings



Spent 37% of planned expenditures

| Discharge air temp reset     Category          | 2019 | 2020   | 2021   | 2022   | 2023    | Lifetime |
|------------------------------------------------|------|--------|--------|--------|---------|----------|
| Total Program Cost (\$)                        | 0    | 21,142 | 38,028 | 18,553 | 30,001  | 107,724  |
| Total Program Participants (#)                 | 0    | O      | 2      | 0      | 1       | 3        |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 43,444 | 0      | 50,462  |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 39,100 | 0      | 45,416  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | Ó      | 0      | 0       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 0       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0       |          |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 20,905 | 0      | 103,886 | 591,587  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 0      | 0       | 0        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 0       | 0        |









### Case #: PUE-2018-00168

### NON-RESIDENTIAL SMALL MANUFACTURING

2019-2023

184,227 kWh/yr Average Net Savings Per Participant

### Eligibility

 All non-residential customers are eligible except those exempt by statute, special contract, or opt out

- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- · Facility assessment
- · Compressed air leak repair
- · No loss condensate drains
- Efficient VSD compressors
- Cycling refrigerant dryers

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Enrolled **62** customers, **21%** of planned participation

Achieved net annual energy savings of 11,422 MWh/year, 84% of planned energy savings



Spent 49% of planned expenditures

| Category                                       | 2019    | 2020    | 2021    | 2022      | 2023      | Lifetime    |
|------------------------------------------------|---------|---------|---------|-----------|-----------|-------------|
| Total Program Cost (\$)                        | 367,297 | 331,721 | 280,616 | 695,693   | 1,168,250 | 2,843,577   |
| Total Program Participants (#)                 | 0       | 0       | 1       | 19        | 42        | 62          |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 0       | 112,237 | 4,886,095 | 7,692,863 |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 0       | 101,013 | 4,397,486 | 6,923,577 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 0       | 23      | 582       | 928       |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 0       | 21      | 524       | 835       |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0       | 23      | 582       | 928       |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0       | 21      | 524       | 835       |             |
| Total Net Lifetime Savings (kWh)               | 0       | 0       | 24,707  | 1,256,488 | 9,400,486 | 140,899,270 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 0       | 21      | 545       | 1,380     | 1,380       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0       | 21      | 545       | 1,380     | 1,380       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



Docket #: E-22, Sub 571

### NON-RESIDENTIAL SMALL MANUFACTURING

2019-2023

94,487 kWh/yr Average Net Savings Per Participant

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### Eligibility

· All non-residential customers are eligible except those exempt by statute, special contract, or opt out

- · Must be the owner of the facility or reasonably able to secure
- permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

- · Facility assessment
- · Compressed air leak repair
- · No loss condensate drains
- · Efficient VSD compressors
- · Cycling refrigerant dryers

Enrolled 4 customers, 25% of planned participation

Achieved net annual energy savings of 377,948 kWh/year, 52% of planned energy savings

Spent 41% of planned expenditures

| Category                                       | 2019 | 2020   | 2021   | 2022   | 2023    | Lifetime  |
|------------------------------------------------|------|--------|--------|--------|---------|-----------|
| Total Program Cost (\$)                        | 0    | 18,987 | 17,245 | 16,181 | 76,431  | 128,844   |
| Total Program Participants (#)                 | 0    | 0      | 0      | 0      | 4       | 4         |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 0      | 0      | 419,942 |           |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 0      | 0      | 377,948 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 46      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 42      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 46      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 42      |           |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 0      | 0      | 258,767 | 4,663,542 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 0      | 42      | 42        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 42      | 42        |









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Case #: PUE-2018-00168

### NON-RESIDENTIAL WINDOW FILM

2019-2023

5,430 kWh/yr Average Net Savings Per Participant

### Eligibility

· All non-residential customers are eligible except those exempt by statute, special contract, or opt out

- · Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

### Measures

· Solar reduction window film

Enrolled 86 customers, 0.02% of planned participation

Achieved net annual energy savings of 466,946 kWh/year, 6% of planned energy savings



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Spent 68% of planned expenditures

| Category                                       | 2019    | 2020    | 2021    | 2022    | 2023      | Lifetime  |
|------------------------------------------------|---------|---------|---------|---------|-----------|-----------|
| Total Program Cost (\$)                        | 192,146 | 356,882 | 325,497 | 273,733 | 254,640   | 1,402,899 |
| Total Program Participants (#)                 | 0       | 22      | 19      | 28      | 17        | 86        |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 250,377 | 79,659  | 180,296 | 73,351    |           |
| Total Net Incremental Savings (kWh/yr)         | 0       | 200,302 | 63,727  | 144,237 | 58,681    |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 78      | 0       | 0       | 0         |           |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 62      | 0       | 0       | 0         |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0       | 0       | 0       | 0         |           |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0       | 0       | 0       | 0         |           |
| Total Net Lifetime Savings (kWh)               | 0       | 117,854 | 370,378 | 650,428 | 1,099,141 | 4,670,466 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 62      | 62      | 62      | 62        | 62        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0       | 0       | 0       | 0         | 0         |





Docket #: E-22, Sub 570

### NON-RESIDENTIAL WINDOW FILM

2019-2023

6,974 kWh/yr Average Net Savings Per Participant

#### Eligibility

All non-residential customers are eligible except those exempt
 by statute, special contract, or opt out

- Must be the owner of the facility or reasonably able to secure permission to complete measures
- · Work must be completed by a participating contractor

#### Measures

Solar reduction window film

Enrolled **2** customers, **0.01%** of planned participation

Achieved net annual energy savings of 13,948 kWh/year, 3% of planned energy savings

Spent 60% of planned expenditures

| Category                                                                                                        | 2019 | 2020   | 2021   | 2022   | 2023   | Lifetime |
|-----------------------------------------------------------------------------------------------------------------|------|--------|--------|--------|--------|----------|
| Total Program Cost (\$)                                                                                         | 0    | 18,804 | 19,546 | 13,856 | 14,219 | 66,426   |
| Total Program Participants (#)                                                                                  | 0    | 1      | 1      | 0      | 0      | 2        |
| Total Gross Incremental Savings (kWh/yr)                                                                        | 0    | 17,430 | 6      | 0      | 0      |          |
| Total Net Incremental Savings (kWh/yr)                                                                          | 0    | 13,944 | 5      | 0      | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)                                                                    | 0    | 5      | 0      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)                                                                      | 0    | 4      | 0      | 0      | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)                                                                    | 0    | 0      | 0      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)                                                                      | 0    | 0      | 0      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)                                                                                | 0    | 4,849  | 18,794 | 0      | 0      | 139,528  |
| Peak Net Lifetime Summer Demand Reduction (kW)                                                                  | 0    | 4      | 4      | 0      | 0      | 4        |
| Peak Net Lifetime Winter Demand Reduction (kW)                                                                  | 0    | 0      | 0      | 0      | 0      | 0        |
| the second se |      |        |        |        |        |          |







Case #: PUE-2018-00168

# NON-RESIDENTIAL MIDSTREAM ENERGY EFFICIENCY PRODUCTS

2020-2023

17,336 kWh/yr Average Net Savings Per Participant

### Eligibility

- Distributor or retailer operating in Virginia
- Distributor or retailer is required to discount the rebate-eligible equipment sold to the purchaser at the time-of-sale and must provide point-of-sale monthly data for all transactions of eligible energy efficiency equipment

#### Measures

- Electric Fryers
- Hot Food Holding Cabinets
- Griddles
- · Convection and Combination Ovens
- · Steam Cookers, Freezers, Refrigerators
- · Packaged Terminal Air and Unitary Air Conditioners
- · Unitary and Mini Split Heat Pumps
- · Air Cooled and Water Cooled Chillers

Rebated **203** work orders that contained discounted energy efficiency measures, **23%** of planned participation

Achieved net annual energy savings of **3,519 MWh/year, 31%** of planned energy savings



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Spent 37% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022      | 2023      | Lifetime   |
|------------------------------------------------|------|--------|---------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      | 46,145 | 488,674 | 845,079   | 717,250   | 2,097,148  |
| Total Program Participants (#)                 |      | 0      | 7       | 113       | 83        | 203        |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 65,116  | 1,624,787 | 2,220,361 |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 58,605  | 1,462,308 | 1,998,325 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 81      | 1,957     | 621       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 73      | 1,762     | 559       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 11      | 74        | 303       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 10      | 67        | 273       |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 5,901   | 393,482   | 3,073,418 | 63,211,180 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 73      | 1,835     | 2,394     | 2,394      |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 10      | 77        | 350       | 350        |







Case #: PUR-2019-00201

### NON-RESIDENTIAL MULTIFAMILY

2020-2023

9,988 kWh/yr Average Net Savings Per Participant

### Eligibility

· All non-residential customers are eligible except those exempt by statute, special contract, or opt out

· Must be the owner of the facility or reasonably able to secure permission to complete measures

#### Measures

- · On-site energy assessment of common areas
- · Pipe insulation
- · LED lamps
- · Tune-up of heat pump system and/or central AC
- · Installation of smart thermostats
- · Air sealing, duct sealing, attic insulation
- · Installation of ENERGY STAR® washers and dryers

Enrolled 34 customers, 1% of planned participation

Achieved net annual energy savings of 339,606 kWh/year, 4% of planned energy savings



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Spent 51% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 28,431 | 201,595 | 173,987 | 310,611 | 714,624   |
| Total Program Participants (#)                 |      | 0      | 0       | 5       | 29      | 34        |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 0       | 165,606 | 211,734 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 0       | 149,045 | 190,561 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 18      | 4       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 16      | 4       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 18      | 7       |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 16      | 6       |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 0       | 5,648   | 205,726 | 2,909,204 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 16      | 20      | 20        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 16      | 23      | 23        |
|                                                |      |        |         |         |         |           |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)



Case #: PUR-2019-00201

### NON-RESIDENTIAL NEW CONSTRUCTION

2020-2023

3,234,344 kWh/yr Average Net Savings Per Participant

#### Eligibility

- Non-residential customers for new construction or extensive renovation projects
- Non-residential customers except those who are exempt by statute, special contract, or opt out

#### The program participants engage during the design phase of the project. The long lead-time required to design and construct buildings may be one contributing factor to the lack of participation through 2022. Projects are expected to be completed in early 2023.

#### Measures

- · High performance interior lighting designs
- · LED exterior lighting
- Efficient chillers and air-source heat pumps
- · Chiller controls
- · Efficient HVAC system controls
- · Demand controlled ventilation
- Plug load management systems

Achieved net annual energy savings of **25,875 MWh/year, 331%** of planned energy savings



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Spent 65% of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023       | Lifetime    |
|------------------------------------------------|------|--------|---------|---------|------------|-------------|
| Total Program Cost (\$)                        |      | 27,624 | 603,899 | 477,704 | 2,241,471  | 3,350,697   |
| Total Program Participants (#)                 |      | 0      | 0       | 0       | 8          | 8           |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 0       | 0       | 28,749,726 |             |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 0       | 0       | 25,874,754 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 0       | 3,216      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 0       | 2,895      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 0       | 3,611      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 0       | 3,250      |             |
| Total Net Lifetime Savings (kWh)               |      | 0      | 0       | 0       | 9,989,031  | 388,225,899 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 0       | 2,895      | 2,895       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 0       | 3,250      | 3,250       |

#### TOTAL SAVING BY MEASURE TYPE TOP 5 (MWH/YR)

#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



### North Carolina Docket #: E-22, Sub 591 NON-RESIDENTIAL NEW CONSTRUCTION 2020-2023 39,446 kWh/yr Average Net Savings Per Participant Eligibility The program participants engage during the design phase of the project. The long lead-time · Non-residential customers for new construction or extensive renovation projects required to design and construct buildings may be · Non-residential customers except those who are exempt by one contributing factor to the lack of participation through 2022. Projects are expected to be statute, special contract, or opt out completed in early 2023. Measures Achieved net annual energy savings of 39,446 kWh/year, 8% of planned energy · High performance interior lighting designs

- · LED exterior lighting
- · Efficient chillers and air-source heat pumps
- · Chiller controls

High Performance Interior Lighting

> LED Exterior Lighting

High Efficiency and Variable Speed Packaged DX Cooling Equipment

Optimal Choice

of Vertical Fenestration 1.23

- · Efficient HVAC system controls
- · Demand controlled ventilation
- · Plug load management systems

savings



Spent 34% of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022   | 2023   | Lifetime |
|------------------------------------------------|------|------|--------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      | 27,089 | 30,963 | 51,331 | 109,383  |
| Total Program Participants (#)                 |      |      | 0      | 0      | 1      | 1        |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 0      | 43,829 |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 0      | 39,446 |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 0      | 8      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 0      | 7      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0      | 7      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0      | 6      |          |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 0      | 11,993 | 602,851  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 0      | 7      | 7        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0      | 6      | 6        |





### Case #: PUR-2019-00201

# NON-RESIDENTIAL SMALL BUSINESS IMPROVEMENT ENHANCED

2020-2023

5,747 kWh/yr Average Net Savings Per Participant

202

### Eligibility

- Non-residential customers with privately-owned businesses in five or fewer locations
- Customer's monthly demand has not exceeded 100 kilowatts
   more than three times in the past 12 months
- Customer must be responsible for the electric bill and must be the owner of the facility or able to secure permission to complete measures

#### Measures

- · Energy efficient lighting solutions
- · Unitary/split AC & HP upgrade
- Dual Enthalpy air-side economizer
- Programmable thermostat
- Duct testing and sealing
- · Unitary/split AC & HP tune-up
- Refrigerant charge correction
- · Compressed air leak repair

Enrolled **1,845** customers, **97%** of planned participation

Achieved net annual energy savings of **10,604 MWh/year, 38%** of planned energy savings

Spent 99% of planned expenditures

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023       | Lifetime    |
|------------------------------------------------|------|--------|-----------|-----------|------------|-------------|
| Total Program Cost (\$)                        |      | 56,290 | 2,443,713 | 3,445,530 | 4,901,879  | 10,847,412  |
| Total Program Participants (#)                 |      | O      | 307       | 591       | 947        | 1,845       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 2,429,201 | 5,119,684 | 5,161,646  |             |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 2,131,262 | 4,490,565 | 3,981,709  |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 449       | 1,077     | 1,198      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 354       | 833       | 956        |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 328       | 630       | 551        |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 253       | 478       | 422        |             |
| Total Net Lifetime Savings (kWh)               |      | 0      | 685,329   | 5,373,000 | 13,932,432 | 108,041,135 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 354       | 1,188     | 2,143      | 2,143       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 253       | 731       | 1,153      | 1,153       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)

#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



#### North Carolina Docket #: E-22, Sub 596 NON-RESIDENTIAL SMALL BUSINESS IMPROVEMENT ENHANCED 2020-2023 24,830 kWh/yr Average Net Savings Per Participant Eligibility · Non-residential customers with privately-owned businesses in five or fewer locations Enrolled 63 customers, 51% of planned · Customer's monthly demand has not exceeded 100 kilowatts participation more than three times in the past 12 months · Customer must be responsible for the electric bill and must be the owner of the facility or able to secure permission to complete measures Achieved net annual energy savings of 1,564 MWh/year, 88% of planned energy Measures savings · Energy efficient lighting solutions · Unitary/split AC & HP upgrade · Dual Enthalpy air-side economizer · Programmable thermostat Spent 90% of planned expenditures ... · Duct testing and sealing · Unitary/split AC & HP tune-up · Refrigerant charge correction · Compressed air leak repair 2019 2020 2021 2022 2023 Lifetime Category Total Program Cost (\$) 82,440 145,320 385,554 613,314 Total Program Participants (#) 8 8 47 63 315,960 Total Gross Incremental Savings (kWh/yr) 157,603 1,547,651 Total Net Incremental Savings (kWh/yr) 137,636 275,832 1,150,834

30

22

16

11

33,222

22

11



Peak Gross Inc. Summer Demand Reduction (kW)

Peak Net Inc. Summer Demand Reduction (kW)

Peak Gross Inc. Winter Demand Reduction (kW)

Peak Net Lifetime Summer Demand Reduction (kW)

Peak Net Lifetime Winter Demand Reduction (kW)

Peak Net Inc. Winter Demand Reduction (kW)

Total Net Lifetime Savings (kWh)



224

161

171

123

1.227.397

232

155

15,922,148

232

155

67

49

28

20

322,333

71

32



### Case #: PUR-2020-00274

# NON-RESIDENTIAL AGRICULTURAL ENERGY EFFICIENCY

2021-2023

519,961 kWh/yr Average Net Savings Per Participant

#### Eligibility

- · Agricultural facilities on a non-residential or residential rate
- · Must be the owner of the facility or reasonably able to secure
- permission to complete measures

### Measures

- · High volume low speed fans
- · Automatic milker take off
- Poultry house fan VFD
- Poultry LED
- Circulation / ventilation fans
- Dust collection system fan VFD
- · Low pressure irrigation and irrigation pump VFD
- · Grain storage aeration fan controls
- · Greenhouse ventilation fan VFD Greenhouse LED lighting
- Tobacco curing fan VFD
  - - ...

202

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participation

savings

Spent 78% of planned expenditures

Enrolled 11 customers, 4% of planned

Achieved net annual energy savings of

5,720 MWh/year, 153% of planned energy

| Category                                       | 2019 | 2020 | 2021   | 2022      | 2023      | Lifetime   |
|------------------------------------------------|------|------|--------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      |      | 20,770 | 471,081   | 885,158   | 1,377,009  |
| Total Program Participants (#)                 |      |      | 0      | 3         | 8         | 11         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 4,980,594 | 915,873   |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 4,831,176 | 888,397   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 793       | 57        |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 770       | 55        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0         | 10        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0         | 10        |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 487,960   | 5,602,959 | 63,048,276 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 770       | 825       | 825        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0         | 10        | 10         |





#### TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



### Case #: PUR-2020-00274

### NON-RESIDENTIAL BUILDING AUTOMATION

2021-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- · All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- · Rebated DDC controls system must be new and installed in an existing building
- · Both electric and gas heated sites are eligible
- · Eligible sites must be a minimum of 50,000 square feet
- · An assessment must be submitted in the design phase

#### Measures

· Efficient building automation system programming and HVAC equipment controls

The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.

Achieved net annual energy savings of 0 kWh/year, 0% of planned energy savings



Spent 43% of planned expenditures

| Category                                       | 2019 | 2020 | 2021  | 2022    | 2023    | Lifetime |
|------------------------------------------------|------|------|-------|---------|---------|----------|
| Total Program Cost (\$)                        |      |      | 6,714 | 425,457 | 359,739 | 791,910  |
| Total Program Participants (#)                 |      |      | 0     | 0       | 0       |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 0       | 0       |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 0       | 0       |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 0       | 0       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 0       | 0       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 0       | 0       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 0       | 0       |          |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 0       | 0       |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 0       | 0       |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 0       | 0       |          |

#### Docket #: E-22, Sub 614

### NON-RESIDENTIAL BUILDING AUTOMATION

2022-2023

0 kWh/yr Average Net Savings Per Participant

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### Eligibility

- All non-residential customers are eligible except those exempt
   by statute, special contract, or opt out
- Rebated DDC controls system must be new and installed in an existing building
- · Both electric and gas heated sites are eligible
- Eligible sites must be a minimum of 50,000 square feet
- · An assessment must be submitted in the design phase

#### Measures

Efficient building automation system programming and HVAC equipment controls

The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.

Achieved net annual energy savings of 0 kWh/year, 0% of planned energy savings



| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023   | Lifetime |
|------------------------------------------------|------|------|------|-------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 9,301 | 22,806 | 32,107   |
| Total Program Participants (#)                 |      |      |      | 0     | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 0      |          |
|                                                |      |      |      |       |        |          |

Case #: PUR-2020-00274

### NON-RESIDENTIAL BUILDING OPTIMIZATION

2021-2023

313,140 kWh/yr Average Net Savings Per Participant

#### Eligibility

- · All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- · Must be the owner of the facility or reasonably able to secure permission to complete measures

#### Measures

- Schedule lighting
- Schedule HVAC
- Temperature setback
- · Temperature setup
- · Discharge air temp reset Static pressure reset
- · Dual enthalpy economizer
- · Condensing water temp reset
- · Variable air volume box minimum
- · Coil cleaning · Pump pressure reduction
- · Scheduling non-HVAC equipment
- · Custom retro-commissioning measure
- · Outdoor air reduction
- · Chilled water reset

savings

participation

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Enrolled 45 customers, 80% of planned

Achieved net annual energy savings of

14,091 MWh/year, 153% of planned energy

| Category                                       | 2019 | 2020 | 2021  | 2022      | 2023       | Lifetime   |
|------------------------------------------------|------|------|-------|-----------|------------|------------|
| Total Program Cost (\$)                        |      |      | 6,996 | 503,402   | 1,252,932  | 1,763,329  |
| Total Program Participants (#)                 |      |      | 0     | 2         | 43         | 45         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 1,797,882 | 13,859,112 |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 1,618,094 | 12,473,201 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 47        | 316        |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 42        | 284        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 12        | 23         |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 11        | 20         |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 116,478   | 7,740,162  | 71,068,675 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 42        | 327        | 327        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 11        | 31         | 31         |





Spent 83% of planned expenditures ...

Docket #: E-22, Sub 615

# NON-RESIDENTIAL BUILDING OPTIMIZATION

2022-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt
   by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures

### Measures

- Schedule lighting
- Schedule HVAC
- Temperature setback
- Temperature setup
- Discharge air temp reset
- Static pressure reset
- Dual enthalpy economizer
  Condensing water temp reset
- Variable air volume box minimum
   Coil cleaning
- Pump pressure reduction
- Scheduling non-HVAC equipment
- · Custom retro-commissioning measure
- Outdoor air reduction
- Chilled water reset

0 kWh/year, 0% of planned energy savings

participation

Enrolled 0 customers, 0% of planned

Achieved net annual energy savings of

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023   | Lifetime |
|------------------------------------------------|------|------|------|-------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 9,639 | 29,044 | 38,684   |
| Total Program Participants (#)                 |      |      |      | 0     | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 0      |          |

Spent 43% of planned expenditures

Case #: PUR-2020-00274

### NON-RESIDENTIAL ENGAGEMENT

2021-2023

0 kWh/yr Average Net Savings Per Participant

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### Eligibility

 All non-residential customers are eligible except those exempt by statute, special contract, or opt out

Must be the owner of the facility or reasonably able to secure permission to complete measures

Measures

· Building operator training

The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.

Achieved net annual energy savings of **0 kWh/year, 0%** of planned energy savings

Spent 39% of planned expenditures

| Category                                       | 2019 | 2020 | 2021  | 2022    | 2023    | Lifetime  |
|------------------------------------------------|------|------|-------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 8,109 | 599,509 | 547,994 | 1,155,612 |
| Total Program Participants (#)                 |      |      | o     | 0       | 0       |           |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 0       | 0       |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 0       | 0       |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 0       | 0       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 0       | 0       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 0       | 0       |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 0       | 0       |           |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 0       | 0       |           |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 0       | 0       |           |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 0       | 0       |           |

| <ul> <li>North Carolina</li> </ul>                                                                                                                                                                                                          |                |                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Docket #: E-22, Sub 616                                                                                                                                                                                                                     |                |                                                                                                                                                                                      |
| NON-RESIDENTIAL                                                                                                                                                                                                                             | ENGA           | GEMENT                                                                                                                                                                               |
| 2022-2023<br>0 kWh/yr Average Net Savin                                                                                                                                                                                                     | igs Per Partic | sipant                                                                                                                                                                               |
| Eligibility                                                                                                                                                                                                                                 |                |                                                                                                                                                                                      |
| <ul> <li>All non-residential customers are eligible except those exempt<br/>by statute, special contract, or opt out</li> <li>Must be the owner of the facility or reasonably able to secure<br/>permission to complete measures</li> </ul> | 444            | The nature of the type of measures offered in this<br>program requires long project lead-time, which<br>may be one contributing factor to the lack of<br>completed projects in 2023. |
| Measures                                                                                                                                                                                                                                    | 4              | Achieved net annual energy savings of <b>0 kWh/year, 0%</b> of planned energy savings                                                                                                |
| Building operator training                                                                                                                                                                                                                  |                |                                                                                                                                                                                      |
|                                                                                                                                                                                                                                             |                | Spent 34% of planned expenditures                                                                                                                                                    |

| Category                                       | 2019 | 2020 | 2021 | 2022   | 2023   | Lifetime |
|------------------------------------------------|------|------|------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 15,022 | 34,327 | 49,349   |
| Total Program Participants (#)                 |      |      |      | 0      | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0      | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0      | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0      | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0      | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0      | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0      | 0      |          |

Case #: PUR-2020-00274

# NON-RESIDENTIAL PRESCRIPTIVE ENHANCED

2021-2023

21,726 kWh/yr Average Net Savings Per Participant

----

4

#### Eligibility

- · All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- · Must be the owner of the facility or reasonably able to secure permission to complete measures

### Measures

- Cooking Appliances
- Domestic Heat Pump Water Heater
- · Pre-Rinse Sprayer
- · Commercial Laundry Appliances
- Commercial Kitchen Appliances
- Electronically Commutated Motor
- VSD on Kitchen Exhaust Fan
- · Refrigeration Appliances and Optimizations
- · Parking Deck Ventilation
- · Duct Test and Seal
- Air Conditioning Tune-up · Heat Pump Pool Heater
- · Pool Spa Cover
- Variable Speed Pool Pump
- · Guest Room Occupancy

savings

participation

Spent 192% of planned expenditures

Enrolled 961 customers, 85% of planned

Achieved net annual energy savings of

20,879 MWh/year, 69% of planned energy

| Category                                       | 2019 | 2020 | 2021   | 2022      | 2023       | Lifetime    |
|------------------------------------------------|------|------|--------|-----------|------------|-------------|
| Total Program Cost (\$)                        |      |      | 33,042 | 5,652,798 | 10,122,762 | 15,808,601  |
| Total Program Participants (#)                 |      |      | 0      | 366       | 595        | 961         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 8,848,159 | 14,350,446 |             |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 7,963,344 | 12,915,402 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 5,598     | 14,721     |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 5,038     | 13,249     |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 854       | 3,846      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 768       | 3,461      |             |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 839,297   | 18,675,513 | 135,822,201 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 5,038     | 18,287     | 18,287      |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 768       | 4,230      | 4,230       |

#### TOTAL SAVINGS BY MEASURE TYPE TOP 5 (MWH/YR)







<sup>...</sup> 

#### North Carolina Docket #: E-22, Sub 617 NON-RESIDENTIAL PRESCRIPTIVE ENHANCED 2022-2023 1,539 kWh/yr Average Net Savings Per Participant Eligibility · All non-residential customers are eligible except those exempt by statute, special contract, or opt out Enrolled 13 customers, 18% of planned -· Must be the owner of the facility or reasonably able to secure participation permission to complete measures Measures Achieved net annual energy savings of 20,003 kWh/year, 1% of planned energy Cooking Appliances · Parking Deck Ventilation Domestic Heat Pump Water Heater savings · Duct Test and Seal Pre-Rinse Sprayer Air Conditioning Tune-up Commercial Laundry Appliances · Heat Pump Pool Heater Commercial Kitchen Appliances · Pool Spa Cover · Electronically Commutated Motor ...

- VSD on Kitchen Exhaust Fan

AC Tune ups

Duct Test

and Seal

- Variable Speed Pool Pump
- Guest Room Occupancy
- Refrigeration Appliances and Optimizations

Spent 35% of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022   | 2023    | Lifetime |
|------------------------------------------------|------|------|------|--------|---------|----------|
| Total Program Cost (\$)                        |      |      |      | 21,735 | 102,393 | 124,127  |
| Total Program Participants (#)                 |      |      |      | O      | 13      | 13       |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0      | 22,226  |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0      | 20,003  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0      | 10      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0      | 9       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | · 0    | 15      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0      | 14      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0      | 948     | 163,324  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0      | 9       | 9        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0      | 14      | 14       |



5

TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)







#### Table 5-1. Active peak shaving programs in 2023

| DSM Phase       | Acronym | Program                       | VA | NC |
|-----------------|---------|-------------------------------|----|----|
| Residential     |         |                               |    |    |
| Man             | RTDR    | Smart Thermostat Rewards      | 1  | 1  |
| VIII            | REVDR   | EV Rewards                    | 1  |    |
| IX              | RWDR    | Water Savings Demand Response | 1  | 1  |
| Non-Residential |         |                               |    |    |
| Ш               | DG      | Distributed Generation        | 1  |    |

Figure 5-1 and Figure 5-2 show the cumulative count of peak shaving program participation in the two states, for the active programs, at the county level, through December 31, 2023. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation in descending order, are Fairfax, Virginia Beach City and Chesterfield. In North Carolina, Dare, Halifax, and Currituck counties have the highest participation.

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Virginia Beach City, and Loudoun. In North Carolina, Dare, Currituck, and Halifax counties have the most energy savings.



### Figure 5-1. Virginia and North Carolina Peak Shaving Program Participation, by County

#### Participants

- A. Less than 10
- •B. 10 100
- •C. 100 1,000
- D. 1,000 3,000
- E. More than 3,000



Figure 5-2. Virginia and North Carolina Peak Shaving Net Load Reduction, by County Net Load Reduction

- A. Less than 100 kW
- B. 100 kW 2,000 kW
- C. 2,000 kW 5,000 kW
- D. 5,000 kW 10,000 kW


# Virginia

#### Case #: PUE-2011-00093

# NON-RESIDENTIAL DISTRIBUTED GENERATION

2012-2023

5.75 MW Average Net Savings Per Participant

#### Eligibility

- · Large non-residential customers with at least 200 kW of dispatchable generation
- · One participant is defined as 1 megawatt (MW) of enrolled capacity
- · A participating site may be counted as a fraction of a participant depending on enrolled generation

#### **Events**

- · When electric demand is high, DG sites operate backup generators to reduce load on the system
- · 34 events were called in 2023

21 sites enrolled 5.75 MW ----

Achieved overall annual realization rate of 116%

Spent 41% of planned expenditures

| Category                                 | 2019    | 2020    | 2021    | 2022    | 2023    |
|------------------------------------------|---------|---------|---------|---------|---------|
| Total Program Cost (\$)                  | 589,631 | 570,747 | 608,132 | 620,104 | 475,594 |
| Total Program Participants (adjusted)    | 6.1     | 6.1     | 6.0     | 5.9     | 5.8     |
| Dispatchable Peak Shaving Potential (kW) | 6,927   | 6,498   | 6,627   | 6,115   | 6,688   |
| Realization Rate                         | . 113%  | 106%    | 111%    | 104%    | 116%    |

#### **TOTAL DEMAND SAVINGS** BY YEAR

#### **REALIZATION RATE BY YEAR/SEASON** MEASURED GENERATION / DISPATCHED GENERATION





<sup>...</sup> 

# Virginia

Case #: PUR-2019-00201

# **RESIDENTIAL SMART THERMOSTAT REWARDS**

2020-2023

1.16 kW/participant demand reduction potential

# Eligibility Single-family detached, attached, and manufactured homes with a heat pump or a central air conditioning system Residential customers who have a qualifying smart thermostat Measures Peak demand response program for central air conditioners and heat pumps Spent 98% of planned expenditures

| Category                                           | 2019 | 2020   | 2021    | 2022      | 2023      |
|----------------------------------------------------|------|--------|---------|-----------|-----------|
| Total Program Cost (\$)                            |      | 96,743 | 724,644 | 1,143,292 | 2,160,129 |
| Total Program Participants (adjusted)              |      | 0      | 5,347   | 10,610    | 33,314    |
| Demand Reduction at Peak Planning (kW/participant) |      | 0.00   | 1.07    | 0.94      | 1,16      |
| Dispatchable Peak Shaving Potential (kW)           |      | 0      | 5,695   | 9,973     | 38,494    |
|                                                    |      |        |         |           |           |

#### ESTIMATED PEAK SAVINGS POTENTIAL (KW PER PARTICIPANT)

# DISPATCHABLE PEAK SHAVING POTENTIAL (KW)



| AL SMART                                                                                                                                                                                                     | THERMOS                                                                                                                                                              | TAT RE                                                                                                                                                                                                 | WARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 2                                                                                                                                                                                                            | 020-2023                                                                                                                                                             |                                                                                                                                                                                                        | W/ II (DO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
| 1.16 kW/participant                                                                                                                                                                                          | t demand reduction po                                                                                                                                                | otential                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
| <ul> <li>Single-family detached, attached, and manufactured homes<br/>with a heat pump or a central air conditioning system</li> <li>Residential customers who have a qualifying smart thermostat</li> </ul> |                                                                                                                                                                      |                                                                                                                                                                                                        | Enrolled <b>530</b> customers, <b>30%</b> of planned participation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|                                                                                                                                                                                                              | 4                                                                                                                                                                    | Achieved <b>65</b><br>shaving pote                                                                                                                                                                     | 8 kW of dispatcha<br>ential, 30% of plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ble peak<br>ned potential                                                                                                                                                                                                                                                                                                                                               |  |  |
| ntral air conditioners                                                                                                                                                                                       | 5                                                                                                                                                                    |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      | Spent 52% c                                                                                                                                                                                            | of planned expendi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | tures                                                                                                                                                                                                                                                                                                                                                                   |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
| 2019                                                                                                                                                                                                         | 2020                                                                                                                                                                 | 2021                                                                                                                                                                                                   | 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2023                                                                                                                                                                                                                                                                                                                                                                    |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      | 18,350<br>71                                                                                                                                                                                           | 44,643<br>198                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 56,984<br>530                                                                                                                                                                                                                                                                                                                                                           |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      | 1.07                                                                                                                                                                                                   | 0.94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.16                                                                                                                                                                                                                                                                                                                                                                    |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      | 76                                                                                                                                                                                                     | 186                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 612                                                                                                                                                                                                                                                                                                                                                                     |  |  |
| ENTIAL                                                                                                                                                                                                       | DISF                                                                                                                                                                 | PATCHABLE                                                                                                                                                                                              | Peak Shaving F<br>(KW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | POTENTIAL                                                                                                                                                                                                                                                                                                                                                               |  |  |
| 1.16                                                                                                                                                                                                         |                                                                                                                                                                      |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 612                                                                                                                                                                                                                                                                                                                                                                     |  |  |
| 0.94                                                                                                                                                                                                         |                                                                                                                                                                      | 186                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | • 202                                                                                                                                                                                                                                                                                                                                                                   |  |  |
| 1.07                                                                                                                                                                                                         | 76                                                                                                                                                                   |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | • 202                                                                                                                                                                                                                                                                                                                                                                   |  |  |
|                                                                                                                                                                                                              |                                                                                                                                                                      |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|                                                                                                                                                                                                              | AL SMART<br>2<br>1.16 kW/participant<br>hanufactured home<br>oning system<br>ifying smart thermo<br>htral air conditioners<br>2019<br>ENTIAL<br>1.16<br>1.16<br>1.16 | AL SMART THERMOS<br>2020-2023<br>1.16 kW/participant demand reduction por<br>hanufactured homes<br>oning system<br>ifying smart thermostat<br>f<br>ntral air conditioners<br>2019 2020<br>TENTIAL DISF | AL SMART THERMOSTAT RE<br>2020-2023<br>1.16 kW/participant demand reduction potential<br>hanufactured homes<br>oring system<br>ifying smart thermostat<br>tral air conditioners<br>2019 2020 2021<br>18,350 71 1.07 76<br>ENTIAL DISPATCHABLE 1<br>1.07 76<br>1.07 76 | AL SMART THERMOSTAT REWARDS<br>2020-2023<br>1.16 kW/participant demand reduction potential<br>anufactured homes<br>oning system<br>ifying smart thermostat<br>thrat air conditioners<br>2019 2020 2021 2022<br>18,350 44,643<br>71 198<br>1.07 0.94<br>76 186<br>TENTIAL<br>DISPATCHABLE PEAK SHAVING F<br>(KW)<br>105<br>105<br>105<br>105<br>105<br>105<br>105<br>105 |  |  |

programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and reapproved on July 30, 2020, as part of the DSM Phase VIII programs (Case No.PUR-2019-00201). As a result, the implementation schedule was delayed a year.

# Virginia

Case #: PUR-2019-00201

# RESIDENTIAL ELECTRIC VEHICLE REWARDS

2020-2023

0.20 kW/participant demand reduction potential

# Eligibility

Customer must own an eligible Level 2 EV charger

| <br>E |
|-------|
| F     |

Enrolled **1,491** customers, **117%** of planned participation

Measures

. 1

141

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Achieved **606 kW** of demand reduction, **48%** of planned potential

Reduced electric vehicle charging loads during periods of peak grid electricity demand

Spent 20% of planned expenditures

| Category                                           | 2019 | 2020   | 2021    | 2022    | 2023   |
|----------------------------------------------------|------|--------|---------|---------|--------|
| Total Program Cost (\$)                            |      | 14,034 | 182,492 | 178,959 | 70,466 |
| Total Program Participants (adjusted)              |      | 0      | 0       | 685     | 1,491  |
| Demand Reduction at Peak Planning (kW/participant) |      | 0.00   | 0.00    | 0.00    | 0.20   |
| Dispatchable Peak Shaving Potential (kW)           |      | 0      | 0       | 0       | 300    |

| Case #: PUR-2020-00274                                                                                                                |               |                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------|
|                                                                                                                                       |               |                                                                          |
| RESIDENTIAL WATER SAVING                                                                                                              | 55 DEI        | MAND RESPONSE                                                            |
| 2021-2023<br>0 kW/participant demand r                                                                                                | eduction pote | ential                                                                   |
|                                                                                                                                       |               |                                                                          |
| ligibility                                                                                                                            |               |                                                                          |
| ustomer must be responsible for the electric bill, own the<br>esidence or secure permission to perform the recommended<br>nprovements | ***           | Enrolled <b>8</b> customers, <b>0.43%</b> of planned participation       |
| leasures                                                                                                                              | 4             | Achieved <b>0 kW</b> of demand reduction, <b>0%</b> of planned potential |
| omestic Heat Pump Water Heater                                                                                                        |               |                                                                          |
| riable Speed Pool Pumps                                                                                                               |               |                                                                          |
|                                                                                                                                       | -             | Spent 29% of planned expenditures                                        |

| Category                                         | 2019 | 2020 | 2021  | 2022    | 2023   |
|--------------------------------------------------|------|------|-------|---------|--------|
| Total Program Cost (\$)                          |      |      | 9,167 | 149,786 | 93,391 |
| Total Program Participants (adjusted)            |      |      | 0     | 0       | 8      |
| mand Reduction at Peak Planning (kW/participant) |      |      | 0.00  | 0.00    | 0.00   |
| Dispatchable Peak Shaving Potential (kW)         |      |      | 0     | 0       | 0      |

| Docket #: E-22, Sub 620                                                                             |                                   |                               |           |                                      |                                   |                      |
|-----------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|-----------|--------------------------------------|-----------------------------------|----------------------|
| RESIDENTIAL                                                                                         | NATER S                           | SAVINGS                       | DEI       | MAND F                               | RESPONSI                          | E                    |
|                                                                                                     | 0 kW/participa                    | 2020-2023<br>ant demand reduc | tion pote | ential                               |                                   |                      |
| Eligibility                                                                                         |                                   |                               |           |                                      |                                   |                      |
| Customer must be responsible for the el<br>residence or secure permission to perfor<br>improvements | ectric bill, own<br>rm the recomm | the<br>ended                  | ***       | Enrolled <b>0</b> c<br>participation | ustomers, <b>0%</b> of pl         | anned                |
| Measures                                                                                            |                                   |                               | 4         | Achieved <b>0 I</b><br>planned pote  | <b>(W</b> of demand red<br>ential | uction, <b>0%</b> of |
| Domestic Heat Pump Water Heater<br>Variable Speed Pool Pumps                                        |                                   |                               |           |                                      |                                   |                      |
|                                                                                                     |                                   |                               |           | Spent 34% o                          | of planned expendi                | tures                |
|                                                                                                     |                                   |                               |           |                                      |                                   |                      |
| Category                                                                                            | 2019                              | 2020                          |           | 2021                                 | 2022                              | 2023                 |
| Total Program Cost (\$)                                                                             |                                   |                               |           |                                      | 2,910                             | 5,572                |
| Total Program Participants (adjusted)                                                               |                                   |                               |           |                                      | 0                                 | 0                    |
| and Reduction at Peak Planning (kW/participant)                                                     |                                   |                               |           |                                      | 0.00                              | 0.00                 |
|                                                                                                     |                                   |                               |           |                                      | 0                                 | 0                    |



# ABOUT DNV

DNV is an independent assurance and risk management provider operating in more than 100 countries. Through its broad experience and deep expertise, DNV advances safety and sustainable performance, sets industry standards, and inspires and invents solutions.

We provide assurance to the entire energy value chain through our advisory, monitoring, verification, and certification services. As the world's leading resource of independent energy experts and technical advisors, we help industries and governments navigate the many complex, interrelated transitions taking place globally and regionally in the energy industry. We are committed to realizing the goals of the Paris Agreement and helping our customers transition faster to a deeply decarbonized energy system.

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Appendix A

#### Appendix A. Compliance Matrix

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                              | Required in     |                                       |                                                                                                                                     |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| No. | Reporting Items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Required In                                                                                                    | EMV<br>Summary? | Level                                 | Location in EM&V Report                                                                                                             |
| 1   | DE Dashboard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SCC EM&V Order* p. 19                                                                                          | No              | Portfolio                             | Executive Summary                                                                                                                   |
| 2   | Progress lowards GTSA proposed spending targets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SCC EM&V Order p.19                                                                                            | Yes             | Portfolio                             | Executive Summary                                                                                                                   |
| 4   | Actual spending on a portfolio level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SCC EM&V Order p.19                                                                                            | Yes             | Portfolio                             | Executive Summary                                                                                                                   |
| 1   | The share of total spending on DSM Programs designed to benefit low income, elderly, or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100 State 1 Sec                                                                                                | 122             | 1 min                                 | an were a many                                                                                                                      |
| 6   | disabled individuals, or valerans<br>Progress lowards VCEA energy savings largels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SCC EM&V Order p.19                                                                                            | Yes             | Portfolio                             | Executive Summary                                                                                                                   |
| 7   | Projections towards VCEA energy savings targets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SCC EM&V Order p.19                                                                                            | Yes             | Portfolio                             | Executive Summary                                                                                                                   |
| 8   | Actual energy savings on a portfolio level (net and gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SCC EM&V Order p.19                                                                                            | Yes             | Portfolio                             | Executive Summary                                                                                                                   |
| 10  | Demand savings on a portfolio level (net and gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SCC EM&V Order p.19                                                                                            | Yes             | Portfolio                             | Executive Summary                                                                                                                   |
| 100 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Sector and the sector and                                                                                      | 1               |                                       |                                                                                                                                     |
| 11  | Actual spending on a program level (net and gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SCC EM&V Order p.19, VCEA-                                                                                     | Yes             | Program                               | Executive Summary                                                                                                                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | OCC LINEY OIGH D.15                                                                                            | 103             |                                       | L'ACOUVE STRUITELY                                                                                                                  |
| 13  | Lifetime energy savings on a program level (net and gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SCC EM&V Order p.19, VCEA                                                                                      | Yes             | Program                               | Executive Summary                                                                                                                   |
| 15  | Program operation years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SCC EM&V Order p.19                                                                                            | Yes             | Program                               | Executive Summary                                                                                                                   |
| 16  | Program budgets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SCC EM&V Order p.19                                                                                            | Yes             | Program                               | Executive Summary                                                                                                                   |
| 18  | Program spending as a percentage of budget.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SCC EM&V Order p.19<br>SCC EM&V Order p.19                                                                     | Yes             | Program                               | Executive Summary                                                                                                                   |
| 19  | Program cost per customer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SCC EM&V Order p.19                                                                                            | Yes             | Program                               | Executive Summary                                                                                                                   |
| 20  | DSM related emissions reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CCC FUEL ON THE TO VICE                                                                                        |                 | December                              | Freedom Commente                                                                                                                    |
| 20  | Donrielated emissions reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SUC EMAY OIDER D. 19, VCEA                                                                                     | Tes             | Program                               | Executive Summary                                                                                                                   |
| 21  | "other quantifiable benefits of each program"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SCC EM&V Order p.19, VCEA                                                                                      | Yes             | Program                               | Executive Summary                                                                                                                   |
| 22  | Total customer bill savings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SCC EM&V Order n 10 VCEA                                                                                       | Yas             | Program                               | Executive Summery                                                                                                                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CONTRACTORIZED TO TOPA                                                                                         | 1.910           |                                       | Supports willing                                                                                                                    |
| 23  | Administrative costs by program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SCC EM&V Order p.19, VCEA                                                                                      | Yes             | Program                               | Executive Summary                                                                                                                   |
| 24  | Avoided costs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SCC EM&V Order p. 19, VCEA                                                                                     | Yes             | Program                               | Executive Summary                                                                                                                   |
| -   | Den stern med a Karlingen som die                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COO FUNIO A LO MARTIN                                                                                          |                 |                                       |                                                                                                                                     |
| 25  | Number of Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SCC EM&V Order p.19, VCEA<br>SCC EM&V Order p.17                                                               | No              | Program                               | Executive Summary                                                                                                                   |
| 27  | EM&V Plans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SCC EM&V Rule# 5-318-30                                                                                        | No              | Program                               | Appendix E, Evaluation, Measurement and Verification Plans                                                                          |
| 101 | A AN A THE REPORT OF THE AVERAGE AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.1                                                                                                            |                 | 1                                     | Annandir, I. Drogram Darformanas Indiaday Tables for Visionis 2010-2021                                                             |
| 1.5 | Comparison to originally approved estimated savings for the measures or programs that                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | And the second second                                                                                          | 1.0             |                                       | Appendix 5. Program Performance Indicator Tables for Virginia 2010-2025                                                             |
| 28  | were approved by the Commission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SCC EM&V Rule 5-318-50 F                                                                                       | No              | Program                               | 2023                                                                                                                                |
| 29  | EM8V plan and administration of EM8V activities for reporting period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SCC EMAY Rule 5-318-50 H                                                                                       | Vos             | Program                               | Annandices Land K                                                                                                                   |
| 30  | Annual (net and gross) energy savings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | VCEA                                                                                                           |                 | Program                               | Appendices J and K                                                                                                                  |
| 31  | Capacity savings (net and gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | VCEA                                                                                                           | -               | Program                               | Appendices J and K                                                                                                                  |
| 32  | Lifecycle capacity savings (net and gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | VCEA                                                                                                           | (               | Program                               | Savings, and Non-coincidental Gross Peak Demand Reductions                                                                          |
| 33  | The above metrics aggregated for residential programs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SCC EM&V Order p.19                                                                                            | Yes             | Sector                                | Executive Summary                                                                                                                   |
| 34  | The above metrics aggregated for non-residential programs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SCC EM&V Order p.19                                                                                            | Yes             | Sector                                | Executive Summary                                                                                                                   |
| 35  | M&V methods of measures or programs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SCC EM&V Rule 5-318-40 B                                                                                       | No              | Measure                               | Appendix F, Dominion Energy Technical Reference Manual version 2023                                                                 |
| 36  | Measure-level estimates of kWh, kW (net, gross)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SCC EM&V Rule 5-318-40 C                                                                                       | No              | Measure                               | Appendices J and K                                                                                                                  |
| 37  | estimates for DSM program or measure shall be quantified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SCC EM&V Rule 5-318-50 C                                                                                       | No              | Measure                               | N/A for Phase I - IX programs Appendix E for Phase X                                                                                |
|     | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                |                 |                                       | Appendix D. Methodologies                                                                                                           |
|     | Describe method by which measured data was collected to include at minimum:<br>Sampling plap                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                |                 |                                       | Appendix E. Evaluation, Measurement, and Verification Plans                                                                         |
|     | Statistical calculation upon which reported data is based when applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |                 |                                       | Appendix G. Non-Residential Distributed Generation Impact Evaluation                                                                |
| 20  | Explain eligibility requirements for each rate schedule to which measure or programs are                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CCC FNRV Dite F 240 FO D                                                                                       |                 |                                       | Appendix H. Residential Thermostat Reward Impact Evaluation                                                                         |
| 30  | Comparison of measured annual measure or program savings estimates to annual usage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SUC EMAY RULE 5-310-50 D                                                                                       | NO              | Prodram / Measure                     | Abbendix I. Residential Electric Venicle Reward Impact Evaluation                                                                   |
| 39  | of average rate schedule usage in each rate schedule                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SCC EM&V Rule 5-318-50 F                                                                                       | No              | Rate schedule                         | Appendices J and K                                                                                                                  |
| 40  | Comparison of measured annual measure or program savings estimates to annual usage<br>of and eligible customer in each rate schedule                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SCC FM&V Pute 5-318-50 F                                                                                       | No              | Data schodula                         | Appendicate 1 and K                                                                                                                 |
|     | Description of the controls undertaken by the utility to verify proper installation of measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1000 1000 0 0 10 001                                                                                           |                 | and the state of the to               | A PERIOD S MININ                                                                                                                    |
| 41  | or programs, as appropriate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SCC EM&V Rule 5-318-50 G                                                                                       | No              | Program / Measure                     | Available upon request                                                                                                              |
| 1.1 | Utilities shall require contractors and subcontractors will be implementing measures or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                |                 | -                                     |                                                                                                                                     |
|     | programs, in applicable and processille, to record datals of serviced of replaced equipment, to include at minimum;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                |                 |                                       |                                                                                                                                     |
|     | 1. Nameplate efficiency rating;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                | 1 1             |                                       |                                                                                                                                     |
| -   | 2. Senai numbers,<br>3. Model numbers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                |                 |                                       |                                                                                                                                     |
| 42  | This information will be made available to Staff upon request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SCC EM&V Rule 5-318-50 G                                                                                       | No              | N/A - Program                         | Available upon request                                                                                                              |
| 43  | Make report each and publicly accessible oplice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | VCEA                                                                                                           | No              | Measure, Program,                     | N/A                                                                                                                                 |
| 40  | union rehair mesuk dun hanimik denasama nurgia.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TULA                                                                                                           | bin             | -01000                                | 19/A                                                                                                                                |
|     | Reserves to the second state of the second sta | See e.g. Public Staff testimony in                                                                             |                 |                                       |                                                                                                                                     |
| 44  | in applicable, implement changes and/or corrections to vintage savings recommended by<br>the Public Staff and accepted by the NCUC in the previous DSM/FF cost recovery case                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 604 (Oct. 26, 2021)                                                                                            | No              | Measure, Program,<br>Portfolio        | N/A                                                                                                                                 |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                |                 | Measure, Program,                     |                                                                                                                                     |
| 45  | Demonstrate results achieved by DSM/EE measure/programs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NCUC Rule R8-68(3)(v)                                                                                          | No              | Portfolio                             | This instant report                                                                                                                 |
| 46  | program application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NCUC Rule R8-68(3)(ii)                                                                                         | No              | Program, Portfolio                    | This instant report                                                                                                                 |
| 17  | Total and an internet and a state of the state of the state                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | See NCUC Rule R8-69(f)(1)(ii)-                                                                                 |                 |                                       |                                                                                                                                     |
| 4/  | Track cost savings to support annual cost recovery cases.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (19)                                                                                                           | No              | Program, Portfolio                    | N/A                                                                                                                                 |
|     | the second s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NC DSM/EE Cost Recovery                                                                                        | 100711          | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |                                                                                                                                     |
|     | the second se                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mechanism, Item No. 59 (NCUC<br>Docket No. E-22, Sub 464, March                                                | 1               |                                       |                                                                                                                                     |
| 48  | Verify kWh sales reductions and kW savings to support recoverable net lost revenues.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2017) (NC Mechanism)                                                                                           | No              | Program                               | Appendices F, J, K, and L                                                                                                           |
|     | Verify net dollar savings to support any portfolio performance incentive ("PPI") for each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                | 1               |                                       |                                                                                                                                     |
| 49  | viujade Aeet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NC Mechanism, Item No. 48                                                                                      | No              | Program, Portfolio                    | This instant report, and general EM&V activities                                                                                    |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                |                 |                                       | Appendix D. Internodologies<br>Appendix E. Evaluation, Measurement, and Verification Plans                                          |
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| 91  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | the second s |                 | Measure, Program                      | Appendix G. Non-Residential Distributed Generation Impact Evaluation<br>Appendix H. Residential Thermostat Reward Impact Evaluation |
| 50  | Be based on industry-accepted protocols for the particular program or measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NC Mechanism, Item. No. 45                                                                                     | No              | Portfolio                             | Appendix I. Residential Electric Vehicle Reward Impact Evaluation                                                                   |
|     | nclude the updated cost/benefit analysis of the DSM programs, along with a comparison of<br>the updated cost/benefit analysis to the original cost/benefit analysis as well as all other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SCC 2021 DSM Final Order o                                                                                     | 1 A A           |                                       |                                                                                                                                     |
| 51  | cost/benefit analyses from prior EM&V Reports.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10-11 <sup>A</sup>                                                                                             | No              | Program                               | Appendices J and K                                                                                                                  |

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Appendix B



# Appendix B

Dominion Energy Public Version

June 12, 2024 Prepared by DNV Energy Insights USA (DNV)





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# **1** INTRODUCTION

This supplement to the evaluation, measurement, and verification report contains detailed information about each active program offered to Dominion Energy customers in program year 2023.



# 2 ENERGY EFFICIENCY-RESIDENTIAL ENERGY SERVICES

# 2.1 Residential Appliance Recycling – Virginia and North Carolina

# 2.1.1 Program description

The Residential Appliance Recycling Program provides incentives to residential customers for recycling old, inefficient refrigerators and freezers. A multimedia campaign (printed materials, digital ads) creates program awareness and encourages participation from eligible customers. The program offers an incentive payment of \$20 per eligible appliance



coupled with a convenient and environmentally optimal removal and disposal service. To qualify for the program, Dominion Energy customers must currently receive Electric Supply Service and Electric Delivery Service in accordance with a residential rate schedule, be the party responsible for the electric bill, and be the owner of the refrigerator or freezer. Also, the refrigerator or freezer must be in use, at least ten years old, between 10 and 32 cubic feet, and in working condition to be eligible for the program. Dominion Energy customers can recycle up to two units.

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019 (Case No.

PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on July 1, 2019.<sup>1</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 569).

Participation began in September 2019. In 2021, a new implementation vendor took over the program. The program made a strong recovery in 2022. In 2023 participation tapered off during the latter half of the year.<sup>2</sup> The program was closed at the end of 2023 with SCC approval (August 3, 2023). From 2019 through 2023, the program recycled 6,602 refrigerators or freezers which generated 4,609 gross annual MWh of energy savings.

# 2.1.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-1 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation.

#### Table 2-1. Residential Appliance Recycling Program planning initial assumptions

| Assumption                                                                 | Value                 |
|----------------------------------------------------------------------------|-----------------------|
| Target market                                                              | Residential customers |
| NTG factor                                                                 | 60%                   |
| Measure life (years)                                                       | 8                     |
| Gross average annual energy savings (kWh/year) per participant             | 7842                  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.09                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.09                  |

<sup>1</sup> Virginia Residential Appliance Recycling Program Terms and Conditions

<sup>2</sup> Program operations were subsequently interrupted and ultimately ceased due to vendor issues.



| Assumption                                                               | Value |
|--------------------------------------------------------------------------|-------|
| Net average annual energy savings per participant (kWh/year)             | 470   |
| Net average summer coincident peak demand reduction (kW) per Participant | 0.05  |
| Net average winter coincident peak demand reduction (kW) per Participant | 0.05  |
| Average rebate per participant (\$US)                                    | \$20  |

# 2.1.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

### 2.1.3.1 Key Virginia program data

Table 2-2 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category         | Item                                      | 2021                                     | 2022                                     | 2023                                     | Program total<br>(2019–2023)               |
|------------------|-------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|--------------------------------------------|
|                  | Direct Rebate                             |                                          |                                          |                                          |                                            |
| Operations and   | Direct Implementation                     |                                          |                                          |                                          |                                            |
| Costs (\$)       | Direct EM&V                               |                                          |                                          |                                          |                                            |
| (4)              | Indirect Other (Administrative)           | \$10,451                                 | \$29,331                                 | \$39,546                                 | \$117,170                                  |
|                  |                                           |                                          |                                          |                                          |                                            |
|                  |                                           |                                          |                                          | <b>4505 070</b>                          |                                            |
|                  | Total <sup>4</sup>                        | \$222,880                                | \$702,471                                | \$585,278                                | \$2,368,625                                |
| Total Costs (\$) | Total <sup>4</sup><br>Planned             | \$222,880<br>\$1,784,868                 | \$702,471<br>\$1,808,701                 | \$585,278<br>\$1,802,231                 | \$2,368,625<br>\$8,319,044                 |
| Total Costs (\$) | Total <sup>4</sup><br>Planned<br>Variance | \$222,880<br>\$1,784,868<br>-\$1,561,988 | \$702,471<br>\$1,808,701<br>-\$1,106,229 | \$585,278<br>\$1,802,231<br>-\$1,216,953 | \$2,368,625<br>\$8,319,044<br>-\$5,950,379 |

Table 2-2. Virginia Residential Appliance Recycling Program performance indicators (2019-2023)<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>4</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                              | Item                                        | 2021      | 2022      | 2023      | Program total<br>(2019–2023) |
|---------------------------------------|---------------------------------------------|-----------|-----------|-----------|------------------------------|
| Participants                          | Total (Gross)                               | 0         | 2,478     | 1,532     | 6,561                        |
|                                       | Planned (Gross)                             | 8,930     | 8,930     | 8,930     | 40,945                       |
|                                       | Variance                                    | -8,930    | -6,452    | -7,398    | -34,384                      |
|                                       | Annual % of Planned (Gross)                 | 0%        | 28%       | 17%       | 16%                          |
|                                       | Total Gross Deemed Savings                  | 0         | 1,467,578 | 988,970   | 4,580,152                    |
|                                       | Realization Rate                            | 100%      | 100%      | 100%      | 100%                         |
|                                       | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                            |
|                                       | Adjusted Gross Savings                      | 0         | 1,467,578 | 988,970   | 4,580,152                    |
|                                       | Net-to-Gross Ratio <sup>5</sup>             | 60%       | 60%       | 60%       | 60%                          |
| Installed Energy                      | Net-to-Gross Adjustment                     | 0         | -587,031  | -395,588  | -1,832,061                   |
| Savings<br>(kWh/year)                 | Net Adjusted Savings                        | 0         | 880,547   | 593,382   | 2,748,091                    |
| () out)                               | Planned Savings (Net)                       | 4,201,800 | 4,201,800 | 4,201,800 | 19,265,700                   |
|                                       | Annual % Toward Planned<br>Savings (Net)    | 0%        | 21%       | 14%       | 14%                          |
|                                       | Avg. Savings per Participant<br>(Gross)     | N/A       | 592       | 646       | 698                          |
|                                       | Avg. Savings per Participant (Net)          | N/A       | 355       | 387       | 419                          |
|                                       | Total Gross Deemed Demand                   | 0         | 220       | 148       | 686                          |
|                                       | Realization Rate                            | 100%      | 100%      | 100%      | 100%                         |
|                                       | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                            |
|                                       | Adjusted Gross Demand                       | 0         | 220       | 148       | 686                          |
|                                       | Net-to-Gross Ratio <sup>5</sup>             | 60%       | 60%       | 60%       | 60%                          |
| Installed                             | Net-to-Gross Adjustment                     | 0         | -88       | -59       | -274                         |
| Demand                                | Net Adjusted Demand                         | 0         | 132       | 89        | 411                          |
| Reduction (kW)                        | Planned Demand (Net)                        | 480       | 480       | 480       | 2,199                        |
|                                       | Annual % Toward Planned<br>Demand (Net)     | 0%        | 27%       | 19%       | 19%                          |
|                                       | Avg. Peak Demand per Participant<br>(Gross) | N/A       | 0         | 0         | 0                            |
| Å.                                    | Avg. Demand per Participant (Net)           | N/A       | 0         | 0         | 0                            |
|                                       |                                             |           |           |           |                              |
| Installed Winter                      | Total Gross Deemed Demand                   | 0         | 70        | 47        | 117                          |
| Demand                                | Realization Rate                            | N/A       | 100%      | 100%      | 100%                         |
| Demand<br>Reduction (kW) <sup>6</sup> | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                            |
|                                       | Adjusted Gross Demand                       | 0         | 70        | 47        | 117                          |

<sup>5</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 76% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.

<sup>6</sup> The winter demand reduction (kW) values were omitted in the program year 2022 report, though there were specifications to calculate these values for this program in the PY2022 Technical Reference Manual (TRM), listed in APPENDIX F. The winter demand reduction (kW) was reported as 0 kW in 2022. Prior



| Category   | Item                                        | 2021   | 2022   | 2023   | Program total<br>(2019–2023) |
|------------|---------------------------------------------|--------|--------|--------|------------------------------|
|            | Net-to-Gross Ratio <sup>5</sup>             | 60%    | 60%    | 60%    | 60%                          |
|            | Net-to-Gross Adjustment                     | 0      | -28    | -19    | -47                          |
|            | Net Adjusted Demand                         | 0      | 42     | 28     | 70                           |
|            | Planned Demand (Net)                        | 480    | 480    | 480    | 1,439                        |
|            | Annual % Toward Planned<br>Demand (Net)     | 0%     | 9%     | 6%     | 5%                           |
|            | Avg. Peak Demand per Participant<br>(Gross) | N/A    | 0      | 0      | 0                            |
|            | Avg. Demand per Participant (Net)           | N/A    | 0      | 0      | 0                            |
|            | \$Admin. per Participant (Gross)            | \$19   | \$15   | \$18   | \$18                         |
| Cumulative | \$Admin. per kWh/year (Gross)               | \$0.02 | \$0.02 | \$0.03 | \$0.03                       |
| Annual     | \$Admin. per kW (Gross)                     | \$152  | \$144  | \$171  | \$171                        |
| Program    | \$EM&V per Total Costs (\$)                 | 13.9%  | 10.8%  | 11.0%  | 11.0%                        |
| i chomanee | \$Rebate per Participant (Gross)            | \$20   | \$20   | \$20   | \$20                         |

# 2.1.3.2 Key North Carolina program data

Table 2-3 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category         | Item                               | 2021      | 2022      | 2023      | Program total<br>(2020–2023) |
|------------------|------------------------------------|-----------|-----------|-----------|------------------------------|
|                  | Direct Rebate                      |           |           |           |                              |
| Operations and   | Direct Implementation              |           |           |           |                              |
| Management       | Direct EM&V                        |           |           |           |                              |
| Costs (\$)       | Indirect Other<br>(Administrative) | \$542     | \$1,057   | \$1,668   | \$4,147                      |
|                  |                                    |           |           |           |                              |
| Total Costs (\$) | Total <sup>8</sup>                 | \$11,552  | \$25,314  | \$24,687  | \$78,823                     |
|                  | Planned                            | \$111,062 | \$115,406 | \$110,716 | \$453,315                    |
|                  | Variance                           | -\$99,510 | -\$90,092 | -\$86,029 | -\$374,492                   |
|                  | Annual % of Planned                | 10%       | 22%       | 22%       | 17%                          |

| Table 2-3. North Carolina Residentia | I Appliance Recycling | Program performance | indicators (2020-2023).7 |
|--------------------------------------|-----------------------|---------------------|--------------------------|
|--------------------------------------|-----------------------|---------------------|--------------------------|

<sup>7</sup> The sum of the individual annual values may differ from the total value due to rounding.

to 2021, winter demand reduction (kW) was not calculated for any programs . These values are displayed as "-" or dashes to indicate they were not a metric being estimated. In 2021, the program paused and had no participation, so winter demand reduction was 0 kW. The 2022 gross winter demand reduction (kW) increased from 0 kW to 70 kW and 2022 net winter demand reduction (kW) increased from 0 to 42 kW after the correction.

<sup>&</sup>lt;sup>8</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                   | Item                                        | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|----------------------------|---------------------------------------------|---------|---------|---------|------------------------------|
|                            |                                             |         |         |         |                              |
| Particinants               | Total (Gross)                               | 0       | 19      | 22      | 41                           |
|                            | Planned (Gross)                             | 570     | 570     | 5/0     | 2,280                        |
|                            | Variance                                    | -570    | -551    | -548    | -2,239                       |
|                            | (Gross)                                     | 0%      | 3%      | 4%      | 2%                           |
|                            | Total Cross Desmad                          |         |         |         |                              |
|                            | Savings                                     | 0       | 14,260  | 15,059  | 29,319                       |
|                            | Realization Rate                            | 100%    | 100%    | 100%    | 100%                         |
|                            | Realization Rate<br>Adjustment              | 0       | 0       | 0       | 0                            |
|                            | Adjusted Gross<br>Savings                   | 0       | 14,260  | 15,059  | 29,319                       |
|                            | Net-to-Gross Ratio <sup>5</sup>             | 60%     | 60%     | 60%     | 60%                          |
| Savings<br>(kWb/year)      | Net-to-Gross<br>Adjustment                  | 0       | -5,704  | -6,024  | -11,728                      |
| (kvvn/year)                | Net Adjusted Savings                        | 0       | 8,556   | 9,036   | 17,592                       |
|                            | Planned Savings (Net)                       | 268,200 | 268,200 | 268,200 | 1,072,800                    |
|                            | Annual % Toward<br>Planned Savings (Net)    | 0%      | 3%      | 3%      | 2%                           |
|                            | Avg. Savings per<br>Participant (Gross)     | N/A     | 751     | 685     | 715                          |
|                            | Avg. Savings per<br>Participant (Net)       | N/A     | 450     | 411     | 429                          |
|                            |                                             |         |         |         |                              |
|                            | Installed Demand<br>Reduction (kW)          | 0       | 2       | 2       | 4                            |
|                            | Realization Rate                            | 100%    | 100%    | 100%    | 100%                         |
|                            | Realization Rate<br>Adjustment              | 0       | 0       | 0       | 0                            |
|                            | Adjusted Gross<br>Demand                    | 0       | 2       | 2       | 4                            |
|                            | Net-to-Gross Ratio <sup>5</sup>             | 60%     | 60%     | 60%     | 60%                          |
| Installed<br>Summer Demand | Net-to-Gross<br>Adjustment                  | 0       | -1      | -1      | -2                           |
| Reduction (kW)             | Net Adjusted Demand                         | 0       | 1       | 1       | 3                            |
|                            | Planned Demand<br>(Net)                     | 31      | 31      | 31      | 122                          |
|                            | Annual % Toward<br>Planned Demand<br>(Net)  | 0%      | 4%      | 4%      | 2%                           |
|                            | Avg. Peak Demand<br>per Participant (Gross) | N/A     | 0       | 0       | 0                            |
|                            | Avg. Demand per<br>Participant (Net)        | N/A     | 0       | 0       | 0                            |



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| Category                                    | Item                                        | 2021  | 2022    | 2023  | Program total<br>(2020–2023) |
|---------------------------------------------|---------------------------------------------|-------|---------|-------|------------------------------|
|                                             | Installed Demand<br>Reduction (kW)          | 0     | 1       | 1     | 1                            |
|                                             | Realization Rate                            | 100%  | 100%    | 100%  | 100%                         |
|                                             | Realization Rate<br>Adjustment              | 0     | 0       | 0     | 0                            |
|                                             | Adjusted Gross<br>Demand                    | 0     | 1       | 1     | 1                            |
|                                             | Net-to-Gross Ratio <sup>5</sup>             | 60%   | 60%     | 60%   | 60%                          |
| Installed Winter<br>Demand                  | Net-to-Gross<br>Adjustment                  | 0     | -0      | -0    | -1                           |
| Reduction (kW)                              | Net Adjusted Demand                         | 0     | 0       | 0     | 1                            |
|                                             | Planned Demand<br>(Net)                     | 31    | 31      | 31    | 92                           |
|                                             | Annual % Toward<br>Planned Demand<br>(Net)  | 0%    | 1%      | 1%    | 1%                           |
|                                             | Avg. Peak Demand<br>per Participant (Gross) | N/A   | 0       | 0     | 0                            |
|                                             | Avg. Demand per<br>Participant (Net)        | N/A   | 0       | 0     | 0                            |
|                                             |                                             |       |         |       |                              |
|                                             | \$Admin. per<br>Participant (Gross)         | N/A   | \$130   | \$101 | \$101                        |
| Cumulative<br>Annual Program<br>Performance | \$Admin. per kWh/year<br>(Gross)            | N/A   | \$0     | \$0   | \$0                          |
|                                             | \$Admin. per kW<br>(Gross)                  | N/A   | \$1,162 | \$945 | \$945                        |
|                                             | \$EM&V per Total<br>Costs (\$)              | 24.7% | 18.0%   | 17.4% | 17.4%                        |
|                                             | \$Rebate per<br>Participant (Gross)         | N/A   | \$20    | \$20  | \$20                         |



#### 2.1.3.3 Additional Virginia program data

Figure 2-1 and Figure 2-2 show participation and gross annual energy savings by measure and year, in Virginia. The definition of participants for the Residential Appliance Recycling Program is the count of appliances recycled per unique account number, with a maximum of two appliances per account. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

A total of 6,561 appliances were recycled through the program in Virginia from 2019 to 2023 (Figure 2-1). Approximately 82% of the recycled units were refrigerators and 18% were freezers. From 2019 through 2023, the Residential Appliance Recycling program had 4,580,152 kWh/year in gross annual energy savings in Virginia (Figure 2-2). Of that, 80% of the gross annual savings resulted from refrigerators and 20% from freezers.



Figure 2-1. Virginia Residential Appliance Recycling Program participation by measure and year<sup>9</sup>



Figure 2-2. Virginia Residential Appliance Recycling Program gross annual energy savings (MWh/year) by measure and year<sup>10</sup>



<sup>&</sup>lt;sup>9</sup> There was no program activity during 2021.

<sup>&</sup>lt;sup>10</sup> There was no program activity during 2021.



## 2.1.3.4 Additional North Carolina program data

Figure 2-3 and Figure 2-4 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K

The North Carolina program recycled 41 appliances (Figure 2-3) since the program started in 2022 and generated 29,319 gross annual kWh/year savings (Figure 2-4) Seventy-nine percent of savings resulted from refrigerators and 21% from recycling freezers.

Figure 2-3. North Carolina Residential Appliance Recycling Program participation by measure and year





Figure 2-4. North Carolina Residential Appliance Recycling Program gross annual energy savings (MWh/year) by measure and year





# 2.2 Residential Efficient Products Marketplace – Virginia and North Carolina

# 2.2.1 Program description

The Residential Efficient Products Marketplace Program provides rebates for the purchase of ENERGY STAR<sup>®</sup> qualified appliances. The definition of several of the originally program-eligible LED lamp types was revised under the Energy Independence and Security Act of 2007 (EISA). As a result, in 2023 LED lamps became ineligible for rebates.<sup>11</sup>



To be eligible for the program, a customer must be a Dominion Energy account holder on a residential rate schedule and either own the home or rent the home and have permission from the homeowner to participate. Rebate eligible appliances must be purchased from authorized providers, be ENERGY STAR qualified, and be installed at the service address of the account holder.

The program has three delivery channels:1) appliance rebates processed through the Dominion Energy rebate

portal, 2) coupons provided through the in-store rebate portal and redeemed at the point of purchase, and 3) discounted appliances sold in the Dominion Energy Marketplace. Customers are required to provide a copy of the sales receipt to obtain rebates through the online portal. Customers are eligible for two rebates each for dishwashers, clothes washers, refrigerators, and freezers, and up to four rebates for dehumidifiers and air purifiers.

The Virginia SCC approved this program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168) for a five-year period from July 1, 2019, through June 30, 2024. The program officially launched in Virginia on July 1, 2019.<sup>12</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 568). The program officially launched in North Carolina on January 1, 2020.<sup>13</sup> This program will close in early 2024. A similar appliance rebate program was approved by the Virginia SCC on August 4, 2023 (Case No. PUR-2022-00210). The revised version of this program began in early 2024.

The current program rebated or discounted over 15 million measures in Virginia and North Carolina from 2019 through 2023. In 2023, the program issued rebates for or discounted 19,660 appliances.

# 2.2.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F.

Table 2-4 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of products sold.

<sup>&</sup>lt;sup>11</sup> Energy Independence and Security Act of 2007, Title III, Subtitle B, Sec. 321–325 (2007)

<sup>12</sup> Virginia Residential Efficient Products Marketplace Program Terms and Conditions

<sup>13</sup> North Carolina Residential Efficient Products Marketplace Program Terms and Conditions



Table 2-4. Residential Efficient Products Marketplace Program initial planning assumptions

| Assumption                                                                 | 2019                  | 2020-2024             |
|----------------------------------------------------------------------------|-----------------------|-----------------------|
| Target market                                                              | Residential customers | Residential customers |
| NTG factor                                                                 | 70%                   | 70%                   |
| Measure life (years)                                                       | 17                    | 17                    |
| Gross average annual savings (kWh/year) per participant                    | 33                    | 38                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.0002                | 0.0005                |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.0002                | 0.0005                |
| Net average annual energy savings (kWh/year) per<br>participant            | 23                    | 26                    |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.0001                | 0.0004                |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.0001                | 0.0004                |
| Average rebate (\$US) per participant                                      | \$1.56                | \$1.56                |

# 2.2.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

# 2.2.3.1 Key Virginia program data

Table 2-5 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

In program years 2019 through 2023, 14.8 million measures were either rebated or discounted, which resulted over 446,000 gross annual MWh/year in energy savings. Participation was 188% of the planned value in 2022 but fell to 1% in 2023 because lighting measures were removed from the program, but not from the filed planning values. This resulted in commensurate reduction in program savings achieved in 2023 relative to 2022.

#### Table 2-5. Virginia Residential Efficient Products Marketplace Program performance indicators (2019–2023)<sup>14</sup>

| Category         | Item                            | 2021        | 2022        | 2023        | Program total<br>(2019–2023) |
|------------------|---------------------------------|-------------|-------------|-------------|------------------------------|
|                  | Direct Rebate                   |             |             |             |                              |
| Operations and   | Direct Implementation           |             |             |             |                              |
| Costs (\$)       | Direct EM&V                     |             |             |             |                              |
|                  | Indirect Other (Administrative) | \$396,645   | \$415,532   | \$279,324   | \$1,669,471                  |
| Total Costs (\$) | Total <sup>15</sup>             | \$8,459,198 | \$9,952,004 | \$4,134,018 | \$35,244,327                 |

<sup>14</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>15</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                    | Item                                           | 2021        | 2022            | 2023         | Program total<br>(2019–2023) |
|-----------------------------|------------------------------------------------|-------------|-----------------|--------------|------------------------------|
|                             | Planned                                        | \$7,086,043 | \$9,928,503     | \$10,387,504 | \$40,957,638                 |
|                             | Variance                                       | \$1,373,155 | \$23,501        | -\$6,253,486 | -\$5,713,311                 |
|                             | Annual % of Planned                            | 119%        | 100%            | 40%          | 86%                          |
|                             | Total (Gross)                                  | 4.262.855   | 5,163,385       | 19.118       | 14.829.174                   |
|                             | Planned (Gross)                                | 2,514,548   | 2.744.285       | 2.997.386    | 13.402.098                   |
| Participants                | Variance                                       | 1.749.307   | 2.419.100       | -2.978.268   | 1.427.076                    |
|                             | Annual % of Planned (Gross)                    | 170%        | 188%            | 1%           | 111%                         |
|                             |                                                |             |                 |              |                              |
|                             | Total Gross Deemed Savings                     | 122,317,496 | 150,318,59<br>3 | 2,608,640    | 446,246,169                  |
|                             | Realization Rate                               | 100%        | 100%            | 100%         | 100%                         |
|                             | Realization Rate Adjustment                    | 0           | 0               | 0            | 0                            |
|                             | Adjusted Gross Savings                         | 122,317,496 | 150,318,59<br>3 | 2,608,640    | 446,246,169                  |
|                             | Net-to-Gross Ratio <sup>16</sup>               | 49%         | 50%             | 38%          | 57%                          |
| Installed Energy<br>Savings | Net-to-Gross Adjustment                        | -62,039,898 | -<br>74,705,269 | -1,612,152   | -192,502,447                 |
| (kWh/year)                  | Net Adjusted Savings                           | 60,277,598  | 75,613,324      | 996,488      | 253,743,722                  |
|                             | Planned Savings (Net)                          | 72,753,598  | 79,400,595      | 86,723,585   | 374,827,495                  |
|                             | Annual Percent Toward<br>Planned Savings (Net) | 83%         | 95%             | 1%           | 68%                          |
|                             | Avg. Savings per Participant<br>(Gross)        | 29          | 29              | 136          | 30                           |
| 6.2                         | Avg. Savings per Participant<br>(Net)          | 14          | 15              | 52           | 17                           |
|                             |                                                |             |                 |              |                              |
|                             | Total Gross Demand Reduction                   | 11,274      | 13,821          | 305          | 41,116                       |
|                             | Realization Rate                               | 100%        | 100%            | 100%         | 100%                         |
|                             | Realization Rate Adjustment                    | 0           | 0               | 0            | 0                            |
|                             | Adjusted Gross Demand<br>Reduction             | 11,274      | 13,821          | 305          | 41,116                       |
| Installed Summer            | Net-to-Gross Ratio <sup>16</sup>               | 49%         | 50%             | 39%          | 57%                          |
| Demand<br>Reduction (kW)    | Net-to-Gross Adjustment                        | -5,725      | -6,875          | -186         | -17,776                      |
|                             | Net Adjusted Demand<br>Reduction               | 5,549       | 6,946           | 118          | 23,340                       |
|                             | Planned Demand (Net)                           | 933         | 1,018           | 1,112        | 4,390                        |
|                             | Annual % Toward Planned<br>Demand (Net)        | 595%        | 682%            | 11%          | 532%                         |
|                             | Avg. Peak Demand per<br>Participant (Gross)    | · 0         | 0               | 0            | 0                            |

<sup>&</sup>lt;sup>16</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 66% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                 | Item                                        | 2021    | 2022    | 2023   | Program total<br>(2019–2023) |
|--------------------------|---------------------------------------------|---------|---------|--------|------------------------------|
|                          | Avg. Demand per Participant (Net)           | 0       | 0       | 0      | 0                            |
|                          |                                             |         |         |        |                              |
|                          | Total Gross Demand Reduction                | 23,472  | 29,038  | 147    | 52,657                       |
|                          | Realization Rate                            | 100%    | 100%    | 100%   | 100%                         |
|                          | Realization Rate Adjustment                 | 0       | 0       | 0      | 0                            |
|                          | Adjusted Gross Demand<br>Reduction          | 23,472  | 29,038  | 147    | 52,657                       |
|                          | Net-to-Gross Ratio <sup>16</sup>            | 50%     | 50%     | 40%    | 50%                          |
| Installed Winter         | Net-to-Gross Adjustment                     | -11,851 | -14.385 | -88    | -26,325                      |
| Demand<br>Reduction (kW) | Net Adjusted Demand<br>Reduction            | 11,620  | 14,653  | 59     | 26,332                       |
|                          | Planned Demand (Net)                        | 933     | 1,018   | 1,112  | 3,063                        |
|                          | Annual % Toward Planned<br>Demand (Net)     | 1,246%  | 1,439%  | 5%     | 860%                         |
|                          | Avg. Peak Demand per<br>Participant (Gross) | 0       | 0       | 0      | 0                            |
|                          | Avg. Demand per Participant (Net)           | 0       | 0       | 0      | 0                            |
|                          |                                             |         |         |        |                              |
|                          | \$Admin. per Participant (Gross)            | \$0.10  | \$0.09  | \$0.11 | \$0.11                       |
| Cumulative               | \$Admin. per kWh/year (Gross)               | \$0     | \$0     | \$0    | \$0                          |
| Annual Program           | \$Admin. per kW (Gross)                     | \$36    | \$34    | \$41   | \$41                         |
| Performance              | \$EM&V per Total Costs (%)                  | 2.9%    | 2.5%    | 3.0%   | 3.0%                         |
|                          | \$Rebate per Participant (Gross)            | \$2     | \$1     | \$2    | \$2                          |

# 2.2.3.2 Key North Carolina program data

Table 2-6 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

In program years 2020 through 2023, 288,004 measures were either rebated or discounted, which resulted in nearly 9,200 gross annual MWh/year in energy savings. Participation was 48% of the planned value in 2022 but fell to zero in 2023 because lighting measures were removed from the program, but not from the filed planning values. This resulted in commensurate reduction in program savings achieved in 2023 relative to 2022.


| Table 2-6. North Carolina Residential Efficient Products Marketplace Program performance indicators (2020–2023 | Table 2-6. | North ( | Carolina F | Residential | Efficient | Products | Marketplace | Program | performance | indicators | (2020- | -2023) | 14 |
|----------------------------------------------------------------------------------------------------------------|------------|---------|------------|-------------|-----------|----------|-------------|---------|-------------|------------|--------|--------|----|
|----------------------------------------------------------------------------------------------------------------|------------|---------|------------|-------------|-----------|----------|-------------|---------|-------------|------------|--------|--------|----|

| Category             | Item                                           | 2021       | 2022       | 2023       | Program<br>total<br>(2020–2023) |  |
|----------------------|------------------------------------------------|------------|------------|------------|---------------------------------|--|
| Marine Street Street | Direct Rebate                                  |            |            |            |                                 |  |
| Operations and       | Direct Implementation                          |            |            |            |                                 |  |
| Costs (\$)           | Direct EM&V                                    | 1          |            |            |                                 |  |
|                      | Indirect Other (Administrative)                | \$18,123   | \$12,878   | \$10,639   | \$53,716                        |  |
| -                    | Total <sup>15</sup>                            | \$386,515  | \$308,435  | \$157,460  | \$1,090,612                     |  |
| T. ( . ) O ( . )     | Planned                                        | \$440,922  | \$633,498  | \$638,131  | \$2,137,736                     |  |
| Total Costs (\$)     | Variance                                       | -\$54,407  | -\$325,063 | -\$480,670 | -\$1,047,124                    |  |
|                      | Annual % of Planned                            | 88%        | 49%        | 25%        | 51%                             |  |
|                      | Total (Gross)                                  | 116,668    | 84,301     | 542        | 288.004                         |  |
|                      | Planned (Gross)                                | 160,503    | 175,167    | 191.322    | 665,720                         |  |
| Participants         | Variance                                       | -43,835    | -90,866    | -190,780   | -377,716                        |  |
|                      | Annual % of Planned (Gross)                    | 73%        | 48%        | 0%         | 43%                             |  |
|                      | Total Gross Deemed Savings                     | 3 582 113  | 2 828 480  | 65 245     | 0 183 330                       |  |
|                      | Realization Rate                               | 100%       | 100%       | 100%       | 3,103,330                       |  |
|                      | Realization Rate Adjustment                    | 100 %      | 100 %      | 100 /8     | 100 %                           |  |
|                      | Adjusted Gross Savings                         | 3 582 113  | 2 828 480  | 65 245     | 9 183 330                       |  |
|                      | Net-to-Gross Ratio <sup>16</sup>               | 47%        | 47%        | 37%        | 53%                             |  |
| Installed            | Net-to-Gross Adjustment                        | -1.906.060 | -1.501.251 | -41,162    | -4.359.484                      |  |
| Energy               | Net Adjusted Savings                           | 1,676,053  | 1,327,228  | 24,084     | 4,823,846                       |  |
| (kWh/year)           | Planned Savings (Net)                          | 4,643,845  | 5,068,119  | 5,535,533  | 19,261,325                      |  |
|                      | Annual Percent Toward Planned<br>Savings (Net) | 36%        | 26%        | 0%         | 25%                             |  |
|                      | Avg. Savings per Participant<br>(Gross)        | 31         | 34         | 120        | 32                              |  |
|                      | Avg. Savings per Participant<br>(Net)          | 14         | 16         | 44         | 17                              |  |
|                      | Total Gross Demand Reduction                   | 330        | 261        | 0          | 040                             |  |
|                      | Realization Bate                               | 100%       | 100%       | 100%       | 100%                            |  |
|                      | Realization Rate Adjustment                    | 0          | 0          | 100 /0     | 100 %                           |  |
| Installed            | Adjusted Gross Demand                          | 330        | 261        | 8          | 848                             |  |
| Summer               | Net-to-Gross Ratio <sup>16</sup>               | 47%        | 47%        | 37%        | 52%                             |  |
| Reduction (kW)       | Net-to-Gross Adjustment                        | -176       | -139       | -5         | -403                            |  |
|                      | Net Adjusted Demand<br>Reduction               | 154        | 122        | 3          | 444                             |  |
| 0.1                  | Planned Demand (Net)                           | 60         | 65         | 71         | 247                             |  |
|                      | Annual % Toward Planned                        | 259%       | 188%       | 4%         | 180%                            |  |



| Category                 | Item                                        | 2021   | 2022   | 2023   | Program<br>total<br>(2020–2023) |
|--------------------------|---------------------------------------------|--------|--------|--------|---------------------------------|
|                          | Demand (Net)                                |        |        |        |                                 |
|                          | Avg. Peak Demand per<br>Participant (Gross) | 0      | 0      | 0      | 0                               |
|                          | Avg. Demand per Participant<br>(Net)        | 0      | 0      | 0      | 0                               |
|                          |                                             |        |        |        |                                 |
|                          | Total Gross Demand Reduction                | 686    | 543    | 3      | 1,233                           |
|                          | Realization Rate                            | 100%   | 100%   | 100%   | 100%                            |
|                          | Realization Rate Adjustment                 | 0      | 0      | 0      | 0                               |
|                          | Adjusted Gross Demand<br>Reduction          | 686    | 543    | 3      | 1,233                           |
|                          | Net-to-Gross Ratio <sup>16</sup>            | 47%    | 47%    | 38%    | 47%                             |
| Installed Winter         | Net-to-Gross Adjustment                     | -364   | -287   | -2     | -653                            |
| Demand<br>Reduction (kW) | Net Adjusted Demand<br>Reduction            | 323    | 256    | 1      | 580                             |
|                          | Planned Demand (Net)                        | 60     | 65     | 71     | 196                             |
|                          | Annual % Toward Planned<br>Demand (Net)     | 542%   | 394%   | 2%     | 297%                            |
|                          | Avg. Peak Demand per<br>Participant (Gross) | 0      | 0      | 0      | 0                               |
|                          | Avg. Demand per Participant<br>(Net)        | 0      | 0      | 0      | 0                               |
|                          |                                             |        |        |        |                                 |
|                          | \$Admin. per Participant (Gross)            | \$0.15 | \$0.15 | \$0.19 | \$0.19                          |
| Cumulative               | \$Admin. per kWh/year (Gross)               | \$0    | \$0    | \$0.01 | \$0.01                          |
| Annual<br>Program        | \$Admin. per kW (Gross)                     | \$52   | \$51   | \$63   | \$63                            |
| Performance              | \$EM&V per Total Costs (%)                  | 4.8%   | 4.4%   | 5.4%   | 5.4%                            |
|                          | \$Rebate per Participant (Gross)            | \$2    | \$2    | \$2    | \$2                             |



#### 2.2.3.3 Additional Virginia program data

Figure 2-5 and Figure 2-6 show participation and gross annual energy savings by appliance type and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Since January 2020, the program has discounted or rebated 81,993 appliances in Virginia. During 2023, more than 19,000 appliances were rebated or discounted in Virginia. Clothes washers were the most frequently rebated or discounted appliance (5,266) and followed closely by clothes dryers (4,551), refrigerators (3,883), and dishwashers (2,809). The program generated 2,609 MWh/year of gross annual energy savings in 2023. Clothes washers generated the highest savings trailed by clothes dryers, air purifiers, and refrigerators.

Figure 2-5. Virginia Residential Efficient Products Marketplace Program participation by appliance type and year





Figure 2-6. Virginia Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by appliance type and year



Gross annual energy savings (MWh/year)



Historical lighting performance indicators through program year 2022 are provided for reference in Figure 2-7 and Figure 2-8.







Figure 2-8. Virginia Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by lighting measure and year





#### 2.2.3.4 Additional North Carolina program data

Figure 2-9 and Figure 2-10 show participation and gross annual energy savings by appliance type and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

The program rebated 542 appliances during 2023. The most frequently rebated measures were clothes washers (148), followed by refrigerators (126), dishwashers (114), and clothes dryers (110). The program realized 65 MWh/year of gross annual energy savings in 2023. Clothes washers (28 MWh/year), clothes dryers (19 MWh/year), refrigerators (8.4 MWh/year), and dishwashers (4.1 MWh/year) yielded the highest savings.

Figure 2-9. North Carolina Residential Efficient Products Marketplace Program participation by appliance type and year





Figure 2-10. North Carolina Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by measure and year





Although beginning in 2023, lighting measures were ineligible for rebates, historical lighting performance indicators through program year 2022 are provided for reference in Figure 2-11 and Figure 2-12.

Figure 2-11 North Carolina Residential Efficient Products Marketplace Program participation by lighting measure and year









Gross annual energy savings (MWh/year)



# 2.3 Residential Home Energy Assessment Program – Virginia and North Carolina

## 2.3.1 Program description

The Residential Home Energy Assessment Program, marketed as the Quick Energy Check-Up, provides owners and occupants of single-family homes and townhomes with a home energy assessment. This includes a walk-through assessment of customer homes, the installation of energy saving measures, and recommendations for additional home energy improvements. Customers receive the recommendations in a personalized report showing the projected energy and

cost savings from implementing the options identified during the check-up.

Residential customers living in single-family residences or townhomes with Dominion Energy electric service are eligible for this program. Customers must contact a participating contractor to receive the home energy assessment. Customers are not considered to have fully participated in the program until a completed application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application, and Dominion processes it within 90 days, typically sooner. Table 2-7 details the energy efficient measures that are offered in the program.



| End use            | Measure                           |  |  |  |  |
|--------------------|-----------------------------------|--|--|--|--|
|                    | Water heater pipe insulation      |  |  |  |  |
|                    | Water heater temperature turndown |  |  |  |  |
| Domestic Hot Water | Fixed and handheld showerhead     |  |  |  |  |
|                    | Kitchen and bathroom aerator      |  |  |  |  |
|                    | Domestic heat pump water heater   |  |  |  |  |
|                    | A-line LED lamps                  |  |  |  |  |
| Lighting           | Decorative LED lamps              |  |  |  |  |
|                    | LED downlights                    |  |  |  |  |
|                    | Heat pump tune-up                 |  |  |  |  |
|                    | Heat pump upgrade                 |  |  |  |  |
| IWAC               | Mini split heat pump upgrade      |  |  |  |  |
| NVAC               | Duct sealing                      |  |  |  |  |
|                    | Duct insulation                   |  |  |  |  |
|                    | ECM fan motor                     |  |  |  |  |
| Building Envelope  | Cool roof                         |  |  |  |  |

Table 2-7. Measures offered through the Residential Home Energy Assessment Program

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019, (Case No. PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on October 1, 2019.<sup>17</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 567). The

<sup>17</sup> Virginia Residential Home Energy Assessment Program Terms and Conditions



program officially launched on January 1, 2020.<sup>18</sup> Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

On August 3, 2023, the SCC approved the Company's request (Case No. PUR-2022-00210) to close this program to be consistent with the recommendations in the Company's Long-Term Plan to streamline the DSM Portfolio (approved by the SCC in Case No. PUR-2021-00247). Eligible Customers now participate through the Phase XI Home Energy Evaluation Program. The Home Energy Evaluation offers two distinct pathways for customers to select from based on their homes needs and the customers interest level. They can either choose between an introductory energy check-up or a comprehensive home energy audit. A customer can also have an introductory energy check-up performed and decide to then go on to have a comprehensive home energy audit conducted as a logical next step in their energy efficiency journey later on for even more measures.

The program was evaluated in early 2023 for program years 2020–2022. The evaluation calculated net energy savings using a billing analysis approach that compared pre-installation weather normalized annual consumption (NAC) to post-installation NAC and adjusted the difference using a well-matched comparison group. The evaluation yielded realization rates, by year, and were applied to the savings from 2020 through 2023. The average three-year savings was 562 kWh/year per-participant.<sup>19</sup>

## 2.3.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-8 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Assumption                                                                    | 2019                  | 2020 | 2021 | 2022 | 2023 |  |  |  |
|-------------------------------------------------------------------------------|-----------------------|------|------|------|------|--|--|--|
| Target market                                                                 | Residential customers |      |      |      |      |  |  |  |
| NTG factor                                                                    |                       |      | 80%  |      |      |  |  |  |
| Measure life (years)                                                          | 12.4                  |      |      |      |      |  |  |  |
| Gross average annual energy savings (kWh/year) per<br>participant             | 587                   | 409  | 426  | 452  | 453  |  |  |  |
| Gross average summer coincident peak demand reduction (kW) per participant    |                       | 0.19 | 0.19 | 0.18 | 0.18 |  |  |  |
| Gross average winter coincident peak demand<br>reduction (kW) per participant | 0.77                  | 0.56 | 0.55 | 0.47 | 0.45 |  |  |  |
| Net average annual energy savings (kWh/year) per<br>participant               | 470                   | 327  | 341  | 362  | 362  |  |  |  |

#### Table 2-8. Residential Home Energy Assessment Program planning assumptions

<sup>&</sup>lt;sup>18</sup> North Carolina Residential Home Energy Assessment Program Terms and Conditions

<sup>&</sup>lt;sup>19</sup> The Company's implementation vendor provided the following input: "The Company's implementation vendor identified concerns with DNV's modeled evaluation approach for the Home Energy Assessment (HEA) program. DNV's average modeled savings for the evaluation of approximately 3% fall within DNV's definition of "small (less than 5%) influences", to which it is difficult to model savings due to the natural variation of residential consumption. DNV did not support their findings with modeled program evaluation examples of comparable circumstances and outcomes (realization rate of 27% across all years).

Due to these concerns and the TRM-established, prescriptive nature of the HEA program's measures, the implementation vendor proposed using an adjusted TRM-based evaluation referencing DNV's observations in APPENDIX H. "Uncertainty in DE TRM Estimates" section of the program year 2022 EM&V report filed in SCC Case No. PUR-2021-00247. These included a reduction to the wattage baseline to include CFLs (using data from DE's Residential Home Energy Use Survey (2019–2020)) and a reduction to the blended hours of use (HOU) assumptions by averaging published TRM HOU estimates from across the country. This yielded an approximately 60% realization rate from the tracked savings across all years."



| Assumption                                                               | 2019 | 2020  | 2021 | 2022 | 2023 |
|--------------------------------------------------------------------------|------|-------|------|------|------|
| Net average summer coincident peak demand reduction (kW) per participant | 0.19 | 0.15  | 0.16 | 0.14 | 0.14 |
| Net average winter coincident peak demand reduction (kW) per participant | 0.62 | 0.445 | 0.44 | 0.38 | 0.36 |
| Average rebate (US\$) per participant                                    |      |       | \$82 |      |      |

# 2.3.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.3.3.1 Key Virginia program data

Table 2-9 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                                   | ltem                            | 2021        | 2022        | 2023         | Program<br>total<br>(2019–2023) |
|--------------------------------------------|---------------------------------|-------------|-------------|--------------|---------------------------------|
| The second second                          | Direct rebate                   |             |             |              |                                 |
| Operations and<br>Management Costs<br>(\$) | Direct implementation           |             |             |              |                                 |
|                                            | Direct EM&V                     |             |             |              |                                 |
|                                            | Indirect other (administrative) | \$358,842   | \$194,634   | \$241,998    | \$972,775                       |
|                                            | Total <sup>21</sup>             | \$7,652,974 | \$4,661,476 | \$3,581,578  | \$19,592,223                    |
| Total Coata (\$)                           | Planned                         | \$4,755,154 | \$4,925,188 | \$5,002,110  | \$21,266,300                    |
| Total Costs (\$)                           | Variance                        | \$2,897,820 | -\$263,712  | -\$1,420,532 | -\$1,674,077                    |
|                                            | Annual % of planned             | 161%        | 95%         | 72%          | 92%                             |
| · · · · · · · · · · · · · · · · · · ·      | Total (gross)                   | 9,917       | 6,509       | 4,101        | 23,265                          |
| Darticipante                               | Planned (gross)                 | 32,919      | 32,005      | 32,344       | 136,834                         |
| Participants                               | Variance                        | -23,002     | -25,496     | -28,243      | -113,569                        |
|                                            | Annual % of planned (gross)     | 30%         | 20%         | 13%          | 17%                             |
| Installed Energy                           | Total gross deemed savings      | 22,601,069  | 12,667,811  | 5,081,335    | 45,310,882                      |
| Savings (kWh/year)                         | Realization rate                | 23%         | 40%         | 40%          | 30%                             |

Table 2-9. Virginia Residential Home Energy Assessment Program performance indicators (2019–2023)<sup>20</sup>

<sup>&</sup>lt;sup>20</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>21</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category         | Item                                     | 2021         | 2022       | 2023       | Program<br>total<br>(2019–2023) |
|------------------|------------------------------------------|--------------|------------|------------|---------------------------------|
|                  | Realization rate adjustment              | - 17,402,823 | -7,600,687 | -3,048,801 | -31,921,631                     |
|                  | Adjusted gross savings                   | 5,198,246    | 5,067,125  | 2,032,534  | 13,389,251                      |
|                  | Net-to-gross ratio <sup>22</sup>         | 100%         | 100%       | 100%       | 100%                            |
|                  | Net-to-gross adjustment                  | 0            | 0          | 0          | 0                               |
|                  | Net adjusted savings                     | 5,198,246    | 5,067,125  | 2,032,534  | 13,389,251                      |
|                  | Planned savings (net)                    | 11,219,605   | 11,583,221 | 11,727,738 | 49,036,006                      |
|                  | Annual % toward planned savings (net)    | 46.3%        | 43.7%      | 17.3%      | 27.3%                           |
|                  | Avg. savings per participant (gross)     | 2,279        | 1,946      | 1,239      | 1,948                           |
|                  | Avg. savings per participant (net)       | 524          | 778        | 496        | 576                             |
|                  |                                          |              |            |            |                                 |
|                  | Total gross deemed demand                | 1,414.5      | 1,024.9    | 563.3      | 3,413.8                         |
|                  | Realization rate                         | 23%          | 40%        | 40%        | 31%                             |
|                  | Realization rate adjustment              | -1,089.1     | -615.0     | -338.0     | -2,362.8                        |
|                  | Adjusted gross demand                    | 325.3        | 410.0      | 225.3      | 1,051.1                         |
|                  | Net-to-gross ratio <sup>22</sup>         | 100%         | 100%       | 100%       | 100%                            |
| Installed Summer | Net-to-gross adjustment                  | 0            | 0          | 0          | 0                               |
| Demand Reduction | Net adjusted demand                      | 325.3        | 410.0      | 225.3      | 1,051.1                         |
| (KVV)            | Planned demand (net)                     | 5,121.4      | 4,639.2    | 4,571.6    | 20,851.5                        |
|                  | Annual % toward planned demand (net)     | 6.35%        | 8.84%      | 4.93%      | 5.04%                           |
|                  | Avg. peak demand per participant (gross) | 0.1          | 0.2        | 0.1        | 0.1                             |
|                  | Avg. demand per participant (net)        | 0.03         | 0.06       | 0.05       | 0.05                            |
|                  |                                          |              |            |            |                                 |
|                  | Total gross deemed demand                | 3,163.4      | 1,724.4    | 1,085.2    | 5,973.0                         |
|                  | Realization rate                         | 23%          | 40%        | 40%        | 31%                             |
|                  | Realization rate adjustment              | -2,435.8     | -1,034.6   | -651.1     | -4,121.5                        |
|                  | Adjusted gross demand                    | 727.6        | 689.8      | 434.1      | 1,851.4                         |
| Installed Winter | Net-to-gross ratio <sup>22</sup>         | 100%         | 100%       | 100%       | 100%                            |
| Demand Reduction | Net-to-gross adjustment                  | 0            | 0          | 0          | 0                               |
| (KVV)            | Net adjusted demand                      | 727.6        | 689.8      | 434.1      | 1,851.4                         |
|                  | Planned demand (Net)                     | 14,462.2     | 12,131.2   | 11,664.5   | 38,258.0                        |
|                  | Annual % toward planned demand (net)     | 5.03%        | 5.69%      | 3.72%      | 4.84%                           |
|                  | Avg. peak demand per participant         | 0.3          | 0.3        | 0.3        | 0.3                             |

<sup>&</sup>lt;sup>22</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 84% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category          | Item                              | 2021   | 2022   | 2023   | Program<br>total<br>(2019–2023) |
|-------------------|-----------------------------------|--------|--------|--------|---------------------------------|
|                   | (gross)                           |        |        |        |                                 |
|                   | Avg. demand per participant (net) | 0.07   | 0.1    | 0.1    | 0.09                            |
|                   |                                   |        |        |        |                                 |
|                   | \$Admin. per participant (gross)  | \$42   | \$38   | \$42   | \$42                            |
| Cumulative Annual | \$Admin. per kWh/year (gross)     | \$0.02 | \$0.02 | \$0.02 | \$0.02                          |
| Program           | \$Admin. per kW (gross)           | \$294  | \$256  | \$285  | \$285                           |
| Performance       | \$EM&V per total costs (\$)       | 3.9%   | 3.8%   | 4.2%   | 4.2%                            |
|                   | \$Rebate per participant (gross)  | \$542  | \$505  | \$485  | \$485                           |



#### 2.3.3.2 Key North Carolina program data

Table 2-10 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category     | Item                                  | 2021       | 2022       | 2023       | Program total<br>(2020–2023) |
|--------------|---------------------------------------|------------|------------|------------|------------------------------|
| Operations   | Direct rebate                         |            |            |            |                              |
| and          | Direct implementation                 |            |            |            |                              |
| Management   | Direct EM&V                           |            |            |            |                              |
| Costs (\$)   | Indirect other (administrative)       | \$5,671    | \$4,541    | \$7,738    | \$22,982                     |
|              |                                       |            |            |            |                              |
|              | Total <sup>21</sup>                   | \$120,947  | \$108,763  | \$114,518  | \$441,184                    |
| Total Costs  | Planned                               | \$295,885  | \$314,257  | \$307,292  | \$1,187,812                  |
| (\$)         | Variance                              | -\$174,938 | -\$205,493 | -\$192,774 | -\$746,629                   |
|              | Annual % of planned                   | 41%        | 35%        | 37%        | 37%                          |
|              | Total (gross)                         | 32         | 18         | 8          | 75                           |
|              | Planned (gross)                       | 2.101      | 2.043      | 2.064      | 8.029                        |
| Participants | Variance                              | -2.069     | -2.025     | -2.056     | -7.954                       |
|              | Annual % of planned (gross)           | 2%         | 1%         | 0%         | 1%                           |
|              |                                       | 1          |            |            |                              |
|              | Total gross deemed savings            | 70,833     | 28,587     | 9,334      | 128,167                      |
|              | Realization rate                      | 23%        | 40%        | 40%        | 28%                          |
|              | Realization rate adjustment           | -54,541    | -17,152    | -5,600     | -92,436                      |
|              | Adjusted gross savings                | 16,292     | 11,435     | 3,733      | 35,731                       |
| Installed    | Net-to-gross ratio <sup>22</sup>      | 100%       | 100%       | 100%       | 100%                         |
| Energy       | Net-to-gross adjustment               | 0          | 0          | 0          | 0                            |
| Savings      | Net adjusted savings                  | 16,292     | 11,435     | 3,733      | 35,731                       |
| (Kwn/year)   | Planned savings (net)                 | 716,072    | 739,401    | 748,394    | 2,799,252                    |
|              | Annual % toward planned savings (net) | 2.28%      | 1.55%      | 0.50%      | 1.28%                        |
|              | Avg. savings per participant (gross)  | 2,214      | 1,588      | 1,167      | 1,709                        |
|              | Avg. savings per participant (net)    | 509        | 635        | 467        | 476                          |
|              | T                                     |            |            |            |                              |
| Installed    | Total gross deemed demand             | 4.4        | 2.0        | 0.9        | 8.8                          |
| Summer       | Realization rate                      | 23%        | 40%        | 40%        | 28%                          |
| Demand       | Realization rate adjustment           | -3.4       | -1.2       | -0.5       | -6.3                         |
| Reduction    | Adjusted gross demand                 | 1.0        | 0.8        | 0.4        | 2.5                          |

| Table 2 40   | Manth | Carolina | Decidential | Llamas Ename | Accesses fr | Jus aves the F | a who were a to a a | In dia stans | 10000 000 | 20120  |
|--------------|-------|----------|-------------|--------------|-------------|----------------|---------------------|--------------|-----------|--------|
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|              |       |          |             |              |             |                |                     |              | 1         |        |



| Category       | Item                                     | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|----------------|------------------------------------------|---------|---------|---------|------------------------------|
| (kW)           | Net-to-gross ratio <sup>22</sup>         | 100%    | 100%    | 100%    | 100%                         |
|                | Net-to-gross adjustment                  | 0       | 0       | 0       | 0                            |
|                | Net adjusted demand                      | 1.00    | 0.80    | 0.40    | 2.5                          |
|                | Planned demand (net)                     | 326.9   | 296.1   | 291.7   | 1,193.5                      |
|                | Annual % toward planned demand (net)     | 0.31%   | 0.27%   | 0.13%   | 0.21%                        |
|                | Avg. peak demand per participant (gross) | 0.10    | 0.10    | 0.10    | 0.1                          |
|                | Avg. demand per participant (net)        | 0.03    | 0.04    | 0.05    | 0.03                         |
|                |                                          |         |         |         |                              |
|                | Total gross deemed demand                | 9.6     | 4.3     | 2.0     | 15.9                         |
|                | Realization rate                         | 23%     | 40%     | 40%     | 30%                          |
|                | Realization rate adjustment              | -7.4    | -2.6    | -1.2    | -11.2                        |
|                | Adjusted gross demand                    | 2.2     | 1.7     | 0.8     | 4.7                          |
| Installed      | Net-to-gross ratio <sup>22</sup>         | 100%    | 100%    | 100%    | 100%                         |
| Winter         | Net-to-gross adjustment                  | 0       | 0       | 0       | 0                            |
| Demand         | Net adjusted demand                      | 2.2     | 1.7     | 0.8     | 4.7                          |
| (kW)           | Planned demand (net)                     | 923     | 774     | 744     | 2,442                        |
| ()             | Annual % toward planned demand (net)     | 0.24%   | 0.22%   | 0.11%   | 0.19%                        |
|                | Avg. peak demand per participant (gross) | 0.30    | 0.20    | 0.30    | 0.30                         |
|                | Avg. demand per participant (net)        | 0.07    | 0.09    | 0.10    | 0.08                         |
|                |                                          |         |         |         |                              |
| and the second | \$Admin. per participant (gross)         | \$218   | \$228   | \$306   | \$306                        |
| Cumulative     | \$Admin. per kWh/year (gross)            | \$0.12  | \$0.13  | \$0.18  | \$0.18                       |
| Program        | \$Admin. per kW (gross)                  | \$1,819 | \$1,939 | \$2,618 | \$2,618                      |
| Performance    | \$EM&V per total costs (\$)              | 8.8%    | 9.2%    | 9.7%    | 9.7%                         |
|                | \$Rebate per participant (gross)         | \$460   | \$439   | \$443   | \$443                        |



#### 2.3.3.3 Additional Virginia program data

Figure 2-13 and Figure 2-14 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-13 shows that the most frequently adopted measure was LED lamps, adopted by 89% of program participants. Heat pump tune-ups were the second most installed measure, performed by 11% of participants.<sup>23</sup>

Figure 2-13. Virginia Residential Home Energy Assessment Program participation by measure and year



<sup>&</sup>lt;sup>23</sup> Note that the participant counts in Figure 2-13 and Figure 2-14 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-9), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Lighting measures accounted for approximately 90% of the gross annual energy savings in 2023. Heat pump tune-ups were second, accounting for approximately 3% of energy savings.

Figure 2-14. Virginia Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by measure and year





Figure 2-15 shows the net adjusted (evaluated) savings for program activities in Virginia. The program's realization rate ranged from 22-40% for 2020 through 2023. The savings adjustments were applied to each year accordingly.

Figure 2-15. Virginia Residential Home Energy Assessment Program net annual energy savings (MWh/year) by measure and year





Figure 2-16 and Figure 2-17 show participation and gross annual energy savings by building type and year.

Only single-family detached and single-family attached homes are eligible for the program. Single-family detached homes had the highest participation and gross annual energy savings each year of the program. In 2023, they accounted for 79% of participation and energy savings. Conversely, single-family detached homes accounted for 21% of participation and energy savings.



Figure 2-16. Virginia Residential Home Energy Assessment Program participation by building type and year

Participation



Figure 2-17. Virginia Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by building type and year





Figure 2-18. Virginia Residential Home Energy Assessment Program net annual energy savings (MWh/year) by building type and year





#### 2.3.3.4 Additional North Carolina program data

Figure 2-19 and Figure 2-20 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

In 2023, lighting (all LED lamps) was installed by 100% of program participants and accounted for all savings, as shown in Figure 2-19 and Figure 2-20, respectively.<sup>24</sup>

Figure 2-19. North Carolina Residential Home Energy Assessment Program participation by measure and year



<sup>&</sup>lt;sup>24</sup> Note that the participant counts in Figure 2-19 and Figure 2-20 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 2-10), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-20. North Carolina Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by measure and year



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Figure 2-21 shows the net adjusted savings resulting from the program's impact analysis. The program's realization rate ranged from 22–40% for 2020 through 2023, the savings adjustments have been applied to each measure accordingly.

Figure 2-21. North Carolina Residential Home Energy Assessment Program net annual energy savings (MWh/year) by measure and year





Figure 2-22 and Figure 2-23 show participation and gross annual energy savings by building type and year.

Only single-family detached and single-family attached homes are eligible for the program. In 2023, all of the participants were in single-family detached homes.



Figure 2-22. North Carolina Residential Home Energy Assessment Program participation by building type and year



Figure 2-23. North Carolina Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by building type and year





Figure 2-24. North Carolina Residential Home Energy Assessment Program net annual energy savings (MWh/year) by building type and year



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# 2.4 Residential Customer Engagement – Virginia

## 2.4.1 Program description

The Residential Customer Engagement Program provides regular home energy reports to help customers understand their energy usage and identify how energy is consumed in the home. Customers can review the detailed energy usage breakdown, along with tips for energy efficient appliance usage, to make changes in their home to reduce energy usage and save money. Customers can also see how their energy usage compares with other similar homes. The home energy reports encourage participation in other Dominion Energy Services DSM programs.

The SCC approved this program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in



Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No.PUR-2019-00201). As a result, the planned implementation schedule was delayed a year. The program officially launched on January 1, 2021 with 280,000 participant households for a five-year period of January 1, 2021, through December 31, 2025. In the spring of 2023, DNV conducted an impact evaluation of the Customer Engagement Program for program years 2021–2022. The values reported here reflect the results of the evaluation.

The customer engagement program performance was negatively impacted due to (1) a pause in the program, (2) digital report distribution interruption, and (3) several other unrelated IT issues. The program paused in April of 2023. A new version of the program started in the Spring of 2024.

## 2.4.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-11 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers that get renewed into the program each year.



#### Table 2-11. Residential Customer Engagement Program initial planning assumptions

| Assumption                                                                 | Value                 |  |  |
|----------------------------------------------------------------------------|-----------------------|--|--|
| Target market                                                              | Residential customers |  |  |
| NTG factor                                                                 | 100%                  |  |  |
| Measure life (years)                                                       | 1                     |  |  |
| Gross average annual savings (kWh/year) per participant                    | 168.00                |  |  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.047                 |  |  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.032                 |  |  |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.047                 |  |  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.032                 |  |  |
| Net average annual energy savings (kWh/year) per participant               | 168                   |  |  |
| Average rebate (\$US) per participant                                      | \$0                   |  |  |

# 2.4.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

### 2.4.3.1 Key Virginia program data

Table 2-12 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                                   | Item                            | 2021        | 2022        | 2023        | Program total<br>(2020–2023) |
|--------------------------------------------|---------------------------------|-------------|-------------|-------------|------------------------------|
| Operations and<br>management<br>costs (\$) | Direct rebate                   |             |             |             |                              |
|                                            | Direct implementation           |             |             |             |                              |
|                                            | Direct EM&V                     |             |             |             |                              |
|                                            | Indirect other (administrative) | \$94,387    | \$73,045    | \$78,215    | \$252,586                    |
| 4                                          |                                 |             |             |             |                              |
| Total costs (\$)                           | Total <sup>26</sup>             | \$2,012,981 | \$1,749,425 | \$1,157,588 | \$5,082,608                  |
|                                            | Planned                         | \$1,904,508 | \$1,931,632 | \$1,801,627 | \$5,637,767                  |
|                                            | Variance                        | \$108,473   | -\$182,207  | -\$644,039  | -\$555,159                   |
|                                            | Annual % of planned             | 106%        | 91%         | 64%         | 90%                          |
|                                            |                                 |             |             |             |                              |
| Participants                               | Total (Gross)                   | 286,456     | 263,463     | 256,468     | 806,387                      |
|                                            | Planned (Gross)                 | 287,500     | 277,400     | 258,300     | 823,200                      |

| T 11 0 10 10 1     |                          | -                    |                      |                               |
|--------------------|--------------------------|----------------------|----------------------|-------------------------------|
| Table 2-12. Virgin | lia Residential Customer | r Engagement Program | Performance Indicate | ors (2020–2023) <sup>25</sup> |

<sup>&</sup>lt;sup>25</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>26</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category              | Item                                           | 2021        | 2022        | 2023        | Program total<br>(2020–2023) |
|-----------------------|------------------------------------------------|-------------|-------------|-------------|------------------------------|
|                       | Variance                                       | -1,044      | -13,937     | -1,832      | -16,813                      |
|                       | Annual % of planned (Gross)                    | 100%        | 95%         | 99%         | 98%                          |
|                       | Total error desmad soutings                    | 40 400 740  | 00 040 500  | 00.040.444  | 444.004.007                  |
|                       | l otal gross deemed savings                    | 42,102,743  | 38,940,500  | 33,218,144  | 114,261,387                  |
|                       | Realization rate                               | 8%          | 17%         | 17%         | 38%                          |
|                       | Realization rate adjustment                    | -38,734,523 | -32,320,615 | -27,571,060 | -98,626,198                  |
|                       | Adjusted gross savings                         | 3,368,219   | 6,619,885   | 5,647,085   | 15,635,189                   |
| In stallard an annual | Net-to-gross ratio                             | 100%        | 100%        | 100%        | 100%                         |
| savings               | Net-to-gross adjustment                        | 0           | 0           | 0           | 0                            |
| (kWh/year)            | Net adjusted savings                           | 3,368,219   | 6,619,885   | 5,647,085   | 15,635,189                   |
|                       | Planned savings (Net)                          | 48,300,000  | 46,603,200  | 43,394,400  | 138,297,600                  |
|                       | Annual percent toward planned<br>savings (Net) | 7%          | 14%         | 13%         | 11%                          |
|                       | Avg. savings per participant<br>(Gross)        | 147         | 148         | 130         | 142                          |
| L                     | Avg. savings per participant (Net)             | 12          | 25          | 22          | 19                           |
|                       | Total gross demand reduction                   | NI/A        | NI/A        | NI/A        | NI/A                         |
|                       | Poplication rate                               | N/A         | N/A         | N/A         | N/A                          |
|                       | Realization rate                               | N/A         | N/A         | IN/A        | N/A                          |
|                       | Realization rate adjustment                    | N/A         | N/A         | N/A         | N/A                          |
|                       | Adjusted gross demand reduction                | N/A         | N/A         | N/A         | N/A                          |
| Installed summer      | Net-to-gross ratio                             | N/A         | N/A         | N/A         |                              |
| demand                | Net-to-gross Adjustment                        | N/A         | N/A         | N/A         | N/A                          |
| reduction (kW)        | Net adjusted demand reduction                  | N/A         | N/A         | N/A         | N/A                          |
|                       | Planned demand (Net)2'                         | 13,513      | 13,038      | 12,141      | 38,694                       |
|                       | Annual % toward planned demand (Net)           | N/A         | N/A         | N/A         | N/A                          |
|                       | Avg. Peak demand per participant (Gross)       | N/A         | N/A         | N/A         | N/A                          |
|                       | Avg. demand per participant (Net)              | N/A         | N/A         | N/A         | N/A                          |
|                       |                                                |             |             |             |                              |
|                       | Total gross demand reduction                   | N/A         | N/A         | N/A         | N/A                          |
|                       | Realization rate                               | N/A         | N/A         | N/A         | N/A                          |
| Installed Winter      | Realization rate adjustment                    | N/A         | N/A         | N/A         | N/A                          |
|                       | Adjusted gross demand reduction                | N/A         | N/A         | N/A         | N/A                          |
| Reduction (kW)        | Net-to-gross ratio                             | N/A         | N/A         | N/A         | N/A                          |
|                       | Net-to-gross adjustment                        | N/A         | N/A         | N/A         | N/A                          |
|                       | Net adjusted demand reduction                  | N/A         | N/A         | N/A         | N/A                          |
|                       | Planned demand (Net)                           | 9,200       | 8,877       | 8,266       | 26,342                       |

<sup>&</sup>lt;sup>27</sup> Demand reduction is not evaluated or credited to the Residential Customer Engagement Program



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| Category                                    | Item                                        | 2021   | 2022   | 2023   | Program total<br>(2020–2023) |
|---------------------------------------------|---------------------------------------------|--------|--------|--------|------------------------------|
|                                             | Annual % toward planned demand (Net)        | 0%     | 0%     | 0%     | 0%                           |
|                                             | Avg. peak demand per participant<br>(Gross) | N/A    | N/A    | N/A    | N/A                          |
|                                             | Avg. demand per participant (Net)           | N/A    | N/A    | N/A    | N/A                          |
| Cumulative<br>Annual Program<br>performance | \$Admin. per participant (Gross)            | \$0    | \$0    | \$0    | \$0                          |
|                                             | \$Admin. per kwh/year (gross)               | \$0.00 | \$0.00 | \$0.00 | \$0.00                       |
|                                             | \$Admin. per kw (gross)                     | N/A    | N/A    | N/A    | N/A                          |
|                                             | \$EM&V per total costs (\$)                 | 9.5%   | 8.5%   | 11.4%  | 11.4%                        |
|                                             | \$Rebate per participant (gross)            | \$0    | \$0    | \$0    | \$0                          |

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#### 2.4.3.2 Additional Virginia program data

Figure 2-25 and Figure 2-26 show participation and net annual energy savings by report delivery method and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-25 shows that 256,468 customers participated in the program in 2023. Participation drops slightly from year to year as customers move and accounts close. 62% of the reports were delivered by electronic mail and 38% were paper reports delivered by the U.S. Postal Service. Most of the reports were delivered to single family homes and townhouses.

Figure 2-25. Residential Customer Engagement Program participation by home energy report delivery method





Figure 2-26. Virginia Residential Customer Engagement Program net annual energy savings (MWh/year) by home energy report delivery method





Figure 2-27 and Figure 2-28 show participation and net annual energy savings by building type and year.






Figure 2-28. Virginia Residential Customer Engagement Program net annual energy savings (MWh/year) by building type



(MWh/year)



# 2.5 Residential Electric Vehicle Energy Efficiency and Demand Response – Virginia

## 2.5.1 Program description

The Residential Electric Vehicle (EV) Program provides residential customers a rebate to purchase and install up to two qualified Level 2 EV chargers as a pathway to enrolling in the EV Charger Rewards Program. To read more about the

demand response EV Charger Rewards Program, please see Section 5.3. Customers must separately enroll in the demand response program.

Customers who live in single-family homes (detached, attached, or manufactured) on a residential rate and are responsible for the electric bill, are eligible to participate. Customers are not eligible if they are already enrolled in the Off-Peak Plan or any other time-of-use rate. To participate, customers must purchase a qualifying EV charger and apply for the program rebate within 120 days of purchase. The application process can take extra time because it often requires follow-up communications.



The Virginia SCC approved this program, as part of the

DSM Phase VIII programs, on July 30, 2020 (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The energy efficiency portion of the program officially launched on March 1, 2021, and the demand response portion launched in 2022.<sup>28</sup>

In 2023, 340 new participants joined the program. Dominion Energy increased marketing for the energy efficiency program using bill inserts, partner emails with charger manufacturers, and social media advertisements.

# 2.5.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-13 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of chargers per unique account number, with a maximum of two chargers per account.

#### Table 2-13. Residential Electric Vehicle (EE) Program planning assumptions

| Assumption                                                                 | Value                 |
|----------------------------------------------------------------------------|-----------------------|
| Target market                                                              | Residential customers |
| NTG factor                                                                 | 80%                   |
| Measure life (years)                                                       | 10                    |
| Gross average annual savings per participant (kWh/year)                    | 469                   |
| Gross average summer coincident peak demand reduction per participant (kW) | 0.049                 |
| Gross average winter coincident peak demand reduction per participant (kW) | 0.016                 |
| Net average summer coincident peak demand reduction (kW) per participant   | 0                     |

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| Assumption                                                               | Value    |
|--------------------------------------------------------------------------|----------|
| Net average winter coincident peak demand reduction (kW) per participant | 0        |
| Net average annual energy savings per participant (kWh/year)             | 376      |
| Average rebate per participant (\$US)                                    | \$125.00 |

## 2.5.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

### 2.5.3.1 Key Virginia program data

Table 2-14 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                                   | Item                            | 2021      | 2022       | 2023           | Program total<br>(2020–2023) |
|--------------------------------------------|---------------------------------|-----------|------------|----------------|------------------------------|
| marily Sugar                               | Direct Rebate                   |           |            |                |                              |
| Operations and<br>Management<br>Costs (\$) | Direct Implementation           |           |            |                |                              |
|                                            | Direct EM&V                     |           |            |                |                              |
|                                            | Indirect Other (Administrative) | \$13,241  | \$11,573   | \$5,660        | \$31,093                     |
|                                            | Total <sup>30</sup>             | \$282,385 | \$277,166  | \$83,768       | \$657,836                    |
|                                            | Planned                         | \$349,322 | \$385,915  | \$450,189      | \$1,185,425                  |
| Total Costs (\$)                           | Variance                        | -\$66,937 | -\$108,749 | -<br>\$366,421 | -\$527,589                   |
|                                            | Annual % of Planned             | 81%       | 72%        | 19%            | 55%                          |
|                                            | Total (Gross)                   | 93        | 206        | 340            | 639                          |
| 2010-00-00                                 | Planned (Gross)                 | 550       | 748        | 1,144          | 2,442                        |
| Participants                               | Variance                        | -457      | -542       | -804           | -1,803                       |
|                                            | Annual % of Planned (Gross)     | 17%       | 28%        | 30%            | 26%                          |
|                                            | Total Gross Deemed Savings      | 12,379    | 27,255     | 43,375         | 83,008                       |
| Installed Energy                           | Realization Rate                | 100%      | 100%       | 100%           | 100%                         |
| Savings<br>(kWh/year)                      | Realization Rate Adjustment     | 0         | 0          | 0              | 0                            |
| (ittin/year)                               | Adjusted Gross Savings          | 12,379    | 27,255     | 43,375         | 83,008                       |

| Table 2  | -14 | Virginia   | Residential | Flectric | Vehicle | (FF) | Program | performance  | indicators | (2020-2) | 023)29 |
|----------|-----|------------|-------------|----------|---------|------|---------|--------------|------------|----------|--------|
| I UDIC A |     | VII GIIIIG | Residential | LICOLIIO | Vernore |      | riogram | periorniunoe | maioutors  |          | 1201   |

<sup>&</sup>lt;sup>29</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>30</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                 | Item                                       | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|--------------------------|--------------------------------------------|---------|---------|---------|------------------------------|
|                          | Net-to-Gross Ratio <sup>31</sup>           | 80%     | 80%     | 80%     | 80%                          |
|                          | Net-to-Gross Adjustment                    | -2,476  | -5,451  | -8,675  | -16,602                      |
|                          | Net Adjusted Savings                       | 9,903   | 21,804  | 34,700  | 66,407                       |
|                          | Planned Savings (Net)                      | 206,534 | 280,887 | 429,591 | 917,012                      |
|                          | Annual % Toward Planned Savings (Net)      | 4.79%   | 7.76%   | 8.08%   | 7.24%                        |
|                          | Average Savings per Participant (Gross)    | 133     | 132     | 128     | 130                          |
|                          | Average Savings per Participant (Net)      | 106     | 106     | 102     | 104                          |
|                          | Total Gross Deemed Demand                  | 0       | 0       | 0       | 0                            |
|                          | Realization Rate                           | N/A     | N/A     | N/A     | N/A                          |
|                          | Realization Rate Adjustment                | N/A     | N/A     | N/A     | N/A                          |
|                          | Adjusted Gross Demand                      | 0       | 0       | 0       | 0                            |
| Installed                | Net-to-Gross Ratio <sup>31</sup>           | N/A     | N/A     | N/A     | N/A                          |
| Summer                   | Net-to-Gross Adjustment                    | N/A     | N/A     | N/A     | N/A                          |
| Demand                   | Net Adjusted Demand                        | N/A     | N/A     | N/A     | N/A                          |
| Reduction (kW)           | Planned Demand (Net) <sup>32</sup>         | 21.4    | 29.1    | 44.6    | 95.1                         |
|                          | Annual % Toward Planned Reduction<br>(Net) | 0%      | 0%      | 0%      | 0%                           |
|                          | Average Demand per Participant (Gross)     | 0       | 0       | 0       | 0                            |
|                          | Average Demand per Participant (Net)       | 0       | 0       | 0       | 0                            |
|                          | Total Gross Deemed Demand                  | 0       | 0       | 0       | 0                            |
|                          | Realization Rate                           | N/A     | N/A     | N/A     | N/A                          |
|                          | Realization Rate Adjustment                | N/A     | N/A     | N/A     | N/A                          |
|                          | Adjusted Gross Demand                      | N/A     | N/A     | N/A     | N/A                          |
|                          | Net-to-Gross Ratio <sup>31</sup>           | N/A     | N/A     | N/A     | N/A                          |
| Installed Winter         | Net-to-Gross Adjustment                    | N/A     | N/A     | N/A     | 0                            |
| Demand<br>Reduction (kW) | Net Adjusted Demand                        | N/A     | N/A     | N/A     | 0                            |
| neudonon (nur)           | Planned Demand (Net) <sup>32</sup>         | 7.1     | 9.7     | 14.9    | 31.7                         |
|                          | Annual % Toward Planned Reduction<br>(Net) | 0%      | 0%      | 0%      | 0%                           |
|                          | Average Demand per Participant (Gross)     | 0       | 0       | 0       | 0                            |
|                          | Average Demand per Participant (Net)       | 0       | 0       | 0       | 0                            |
| Cumulative               | \$Admin. per Participant (Gross)           | \$146   | \$85    | \$49    | \$49                         |
| Annual                   | \$Admin. per kWh/year (Gross)              | \$1     | \$1     | \$0     | \$0                          |

<sup>&</sup>lt;sup>31</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 99% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.

<sup>&</sup>lt;sup>32</sup> Despite its name, there is no demand component of the Electric Vehicle Energy Efficiency and Demand Response Program.



| Category    | Item                             | 2021  | 2022  | 2023  | Program total<br>(2020–2023) |
|-------------|----------------------------------|-------|-------|-------|------------------------------|
| Program     | \$Admin. per kW (Gross)          | N/A   | N/A   | N/A   | N/A                          |
| Performance | \$EM&V per Total Costs (\$)      | 14.3% | 14.9% | 16.0% | 16.0%                        |
|             | \$Rebate per Participant (Gross) | \$122 | \$125 | \$125 | \$125                        |



### 2.5.3.2 Additional Virginia program data

Figure 2-29 shows the number of electric vehicle Level 2 chargers installed through the program. Dominion Energy executed its plan to add five eligible charger models to the program in 2023. The Emporia EMEVSE1 model showed strong participation. However, the ChargePoint Home Flex remains the most frequently rebated model.

Figure 2-29. Number of installed electric vehicle Level 2 chargers by model





# 2.6 Residential Home Retrofit – Virginia and North Carolina

### 2.6.1 Program description

The Residential Home Retrofit Program provides owners and occupants of single-family homes and townhomes with a home energy audit. This includes a walk-through review of the customers home, the installation of energy-saving measures, and recommendations for additional home energy improvements. Customers receive the recommendations in a personalized report showing the projected energy and cost savings from implementing the options identified during the audit. The program is designed to provide a more comprehensive energy audit and is for homeowners who want to make a long-term investment in their home's energy efficiency and access more rebate opportunities. The eligible energy efficiency measures are detailed in Table 2-15.



Customers must contact a qualified participating contractor to receive the home energy audit. Customers are not considered to have fully participated in the program until a completed application form is processed and a rebate issued. This process can take several months, as customers have 45 days to submit their rebate application, and Dominion processes it within 90 days, typically sooner.

| End use            | Measure                           |  |  |  |  |
|--------------------|-----------------------------------|--|--|--|--|
|                    | Water heater pipe insulation      |  |  |  |  |
| Domestic hot water | Water heater temperature turndown |  |  |  |  |
|                    | Fixed and handheld showerhead     |  |  |  |  |
|                    | Kitchen and bathroom aerator      |  |  |  |  |
| Lighting           | LED lamps                         |  |  |  |  |
| Defeinerstien      | Refrigerator coil brush           |  |  |  |  |
| Reingeration       | Refrigerator thermometer          |  |  |  |  |
|                    | Heat pump tune-up                 |  |  |  |  |
|                    | Heat pump upgrade                 |  |  |  |  |
|                    | Domestic heat pump water heater   |  |  |  |  |
| HVAC               | Fan motor                         |  |  |  |  |
|                    | Smart thermostat                  |  |  |  |  |
|                    | Air sealing                       |  |  |  |  |
|                    | Duct sealing and insulation       |  |  |  |  |
|                    | Home energy management system     |  |  |  |  |
| whole building     | Insulation                        |  |  |  |  |

#### Table 2-15. Measures offered through Residential Home Retrofit Program

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (Case No. PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched in Virginia on January 15, 2021.<sup>33</sup> The North Carolina Utilities Commission approved this program on February 9, 2021 (Docket No. E-22 Sub 593) and the program officially launched in North Carolina on April 15, 2021.<sup>34</sup>

2023 was the last year of this program. On August 3, 2023, the SCC approved the Company's request (Case No. PUR-2022-00210) to close this program to be consistent with the recommendations in the Company's Long-Term Plan to streamline the DSM Portfolio (approved by the SCC in Case No. PUR-2021-00247).

<sup>33</sup> Virginia Residential Home Retrofit Program Terms and Conditions.

<sup>34</sup> North Carolina Residential Home Retrofit Program Terms and Conditions



Customers who were previously eligible for this program can still participate through the Phase XI Home Energy Evaluation Program.

# 2.6.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-16 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

#### Table 2-16. Residential Home Retrofit Program planning assumptions system-wide

| Assumption                                                                 | Value       |
|----------------------------------------------------------------------------|-------------|
| Target market                                                              | Residential |
| NTG factor                                                                 | 90%         |
| Measure life (years)                                                       | 24          |
| Gross average annual savings (kWh/year) per participant                    | 2,161       |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.62        |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.23        |
| Net average annual energy savings (kWh/year) per participant               | 1,945       |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.56        |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.21        |
| Average rebate (\$US) per participant                                      | \$379       |

## 2.6.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

### 2.6.3.1 Key Virginia program data

Table 2-17 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.



#### Table 2-17. Virginia Residential Home Retrofit Program performance indicators (2020–2023)<sup>35</sup>

| Category                        | Item                                     | 2021            | 2022         | 2023         | Program total<br>(2020–2023) |
|---------------------------------|------------------------------------------|-----------------|--------------|--------------|------------------------------|
| Operations                      | Direct Rebate                            |                 |              |              |                              |
| and<br>Management<br>Costs (\$) | Direct Implementation                    |                 |              |              |                              |
|                                 | Direct EM&V                              |                 |              |              |                              |
|                                 | Indirect Other (Administrative)          | \$40,585        | \$35,604     | \$61,102     | \$139,718                    |
|                                 | Total <sup>36</sup>                      | \$865,549       | \$852,714    | \$904,306    | \$2,679,455                  |
| Total Costs (\$)                | Planned                                  | \$1,308,44<br>6 | \$1,874,062  | \$2,135,815  | \$5,318,323                  |
|                                 | Variance                                 | -\$442,897      | -\$1,021,348 | -\$1,231,509 | -\$2,638,868                 |
|                                 | Annual % of Planned                      | 66%             | 46%          | 42%          | 50%                          |
|                                 | Total (Gross)                            | 99              | 50           | 44           | 193                          |
| and a second                    | Planned (Gross)                          | 846             | 1,880        | 2,350        | 5,076                        |
| Participants                    | Variance                                 | -747            | -1,830       | -2,306       | -4,883                       |
|                                 | Annual % of Planned (Gross)              | 12%             | 3%           | 2%           | 4%                           |
|                                 |                                          |                 |              |              |                              |
|                                 | Total Gross Deemed Savings               | 207,565         | 127,675      | 106,684      | 441,924                      |
|                                 | Realization Rate                         | 100%            | 100%         | 100%         | 100%                         |
|                                 | Realization Rate Adjustment              | 0               | 0            | 0            | 0                            |
|                                 | Adjusted Gross Savings                   | 207,565         | 127,675      | 106,684      | 441,924                      |
|                                 | Net-to-Gross Ratio <sup>37</sup>         | 90%             | 90%          | 90%          | 90%                          |
| Installed                       | Net-to-Gross Adjustment                  | -20,757         | -12,767      | -10,668      | -44,192                      |
| Energy                          | Net Adjusted Savings                     | 186,809         | 114,907      | 96,015       | 397,731                      |
| Savings<br>(kWh/year)           | Planned Savings (Net)                    | 1,645,617       | 3,656,927    | 4,571,158    | 9,873,702                    |
| (Reflayed)                      | Annual % Toward Planned<br>Savings (Net) | 11.4%           | 3.1%         | 2.1%         | 4.0%                         |
|                                 | Avg. Savings per Participant<br>(Gross)  | 2,097           | 2,553        | 2,425        | 2,290                        |
|                                 | Avg. Savings per Participant<br>(Net)    | 1,887           | 2,298        | 2,182        | 2,061                        |
|                                 | Total Gross Deemed Demand                | 68              | 30           | 27           | 125                          |
| Installed                       | Realization Rate                         | 100%            | 100%         | 100%         | 100%                         |
| Demand                          | Realization Rate Adjustment              | 0.00            | 0.00         | 0.00         | 100%                         |
| Demunu                          | Realization Nate Aujustitient            | 0               | U            | U            | U                            |

<sup>&</sup>lt;sup>35</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>36</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>37</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 88% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category             | Item                                       | 2021   | 2022   | 2023    | Program total<br>(2020–2023) |
|----------------------|--------------------------------------------|--------|--------|---------|------------------------------|
| Reduction            | Adjusted Gross Demand                      | 68     | 30     | 27      | 125                          |
| (kW)                 | Net-to-Gross Ratio37                       | 90%    | 90%    | 90%     | 90%                          |
|                      | Net-to-Gross Adjustment                    | -6.8   | -3.0   | -2.7    | -12.5                        |
|                      | Net Adjusted Demand                        | 62     | 27     | 24      | 113                          |
|                      | Planned Demand (Net)                       | 473    | 1,050  | 1,313   | 2,836                        |
|                      | Annual % Toward Planned<br>Reduction (Net) | 13.0%  | 2.6%   | 1.9%    | 4.0%                         |
|                      | Avg. Demand per Participant<br>(Gross)     | 0.70   | 0.60   | 0.60    | 0.60                         |
|                      | Avg. Demand per Participant (Net)          | 0.60   | 0.50   | 0.50    | 0.60                         |
|                      |                                            |        |        |         |                              |
|                      | Total Gross Deemed Demand                  | 75     | 44     | 35      | 154                          |
|                      | Realization Rate                           | 100%   | 100%   | 100%    | 100%                         |
|                      | Realization Rate Adjustment                | 0      | 0      | 0       | 0                            |
|                      | Adjusted Gross Demand                      | 75     | 44     | 35      | 154                          |
| Installed            | Net-to-Gross Ratio37                       | 90%    | 90%    | 90%     | 90%                          |
| Winter               | Net-to-Gross Adjustment                    | -7.5   | -4.4   | -3.5    | -15.4                        |
| Demand               | Net Adjusted Demand                        | 68     | 40     | 31      | 139                          |
| Reduction            | Planned Demand (Net)                       | 175    | 388    | 485     | 1,048                        |
| (kW)                 | Annual % Toward Planned<br>Reduction (Net) | 39%    | 10%    | 6%      | 13%                          |
|                      | Avg. Demand per Participant<br>(Gross)     | 0.80   | 0.90   | 0.80    | 0.80                         |
|                      | Avg. Demand per Participant<br>(Net)       | 0.70   | 0.80   | 0.70    | 0.70                         |
|                      |                                            |        |        |         |                              |
|                      | \$Admin. per Participant<br>(Gross)        | \$434  | \$528  | \$724   | \$724                        |
| Cumulative<br>Annual | \$Admin. per kWh/year<br>(Gross)           | \$0.21 | \$0.23 | \$0.32  | \$0.32                       |
| Program              | \$Admin. per kW (Gross)                    | \$629  | \$799  | \$1,117 | \$1,117                      |
| Performance          | \$EM&V per Total Costs (\$)                | 17.7%  | 17.8%  | 16.4%   | 16.4%                        |
|                      | \$Rebate per Participant<br>(Gross)        | \$234  | \$492  | \$686   | \$686                        |

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### 2.6.3.2 Key North Carolina program data

Table 2-18 provides performance indicator data from 2021 through 2023, in North Carolina. There were no participants in North Carolina through 2023. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                        | Item y and the                           | 2021      | 2022      | 2023      | Program total<br>(2021–2023) |
|---------------------------------|------------------------------------------|-----------|-----------|-----------|------------------------------|
| Operations                      | Direct Rebate                            |           |           |           |                              |
| and<br>Management<br>Costs (\$) | Direct Implementation                    |           |           |           |                              |
|                                 | Direct EM&V                              |           |           |           |                              |
|                                 | Indirect Other (Administrative)          | \$1,676   | \$2,021   | \$3,422   | \$7,118                      |
|                                 | Total <sup>36</sup>                      | \$35,738  | \$48,397  | \$50,642  | \$134,778                    |
| Total Casta (\$)                | Planned                                  | \$81,417  | \$119,576 | \$131,208 | \$332,202                    |
| Total Costs (\$)                | Variance                                 | -\$45,678 | -\$71,179 | -\$80,566 | -\$197,424                   |
|                                 | Annual % of Planned                      | 44%       | 40%       | 39%       | 41%                          |
|                                 | Total (Gross)                            | 0         | 0         | 0         | 0                            |
|                                 | Planned (Gross)                          | 54        | 120       | 150       | 324                          |
| Participants                    | Variance                                 | -54       | -120      | -150      | -324                         |
|                                 | Annual % of Planned (Gross)              | 0%        | 0%        | 0%        | 0%                           |
|                                 | Tatal Orace Desmand Oracinan             |           |           |           |                              |
|                                 | Pacification Pote                        | U         | U NI/A    | U         | U                            |
|                                 | Realization Rate                         |           | N/A       | N/A       | N/A                          |
|                                 | Adjusted Gross Savings                   | 0         | 0         | 0         | 0                            |
|                                 | Net-to-Gross Batio <sup>37</sup>         | NI/A      | N/A       | NI/A      | N/A                          |
| Installed                       | Net-to-Gross Adjustment                  | 0         |           |           | 0                            |
| Savings                         | Net Adjusted Savings                     | 0         | 0         | 0         | 0                            |
| (kWh/year)                      | Planned Savings (Net)                    | 105.039   | 233.421   | 291,776   | 630,236                      |
|                                 | Annual % Toward Planned Savings<br>(Net) | 0%        | 0%        | 0%        | 0%                           |
|                                 | Avg. Savings per Participant (Gross)     | N/A       | N/A       | N/A       | N/A                          |
|                                 | Avg. Savings per Participant (Net)       | N/A       | N/A       | N/A       | N/A                          |
|                                 |                                          |           |           |           |                              |
|                                 | Total Gross Deemed Demand                | 0         | 0         | 0         | 0                            |
| Installed                       | Realization Rate                         | N/A       | N/A       | N/A       | N/A                          |
| Demand                          | Realization Rate Adjustment              | 0         | 0         | 0         | 0                            |
| Reduction                       | Adjusted Gross Demand                    | 0         | 0         | 0         | 0                            |
| (kW)                            | Net-to-Gross Ratio <sup>37</sup>         | N/A       | N/A       | N/A       | N/A                          |
|                                 | Net-to-Gross Adjustment                  | 0         | 0         | 0         | 0                            |

Table 2-18. North Carolina Residential Home Retrofit Program performance indicators (2021-2023)35



| Category    | Item                                    | 2021 | 2022   | 2023   | Program total<br>(2021–2023) |
|-------------|-----------------------------------------|------|--------|--------|------------------------------|
| 1           | Net Adjusted Demand                     | 0    | 0      | 0      | 0                            |
|             | Planned Demand (Net)                    | 30.2 | 67.0   | 83.8   | 181.0                        |
|             | Annual % Toward Planned Reduction (Net) | 0%   | 0%     | 0%     | 0%                           |
|             | Avg. Demand per Participant (Gross)     | N/A  | N/A    | N/A    | N/A                          |
|             | Avg. Demand per Participant (Net)       | N/A  | N/A    | N/A    | N/A                          |
|             | Total Gross Deemed Demand               | 0    | 0      | 0      | 0                            |
|             | Realization Rate                        | N/A  | N/A    | N/A    | N/A                          |
|             | Realization Rate Adjustment             | 0    | 0      | 0      | 0                            |
|             | Adjusted Gross Demand                   | 0    | 0      | 0      | 0                            |
| Installed   | Net-to-Gross Ratio <sup>37</sup>        | N/A  | N/A    | N/A    | N/A                          |
| Winter      | Net-to-Gross Adjustment                 | 0    | 0      | 0      | 0                            |
| Reduction   | Net Adjusted Demand                     | 0    | 0      | 0      | 0                            |
| (kW)        | Planned Demand (Net)                    | 11   | 25     | 31     | 67                           |
|             | Annual % Toward Planned Reduction (Net) | 0%   | 0%     | 0%     | 0%                           |
|             | Avg. Demand per Participant (Gross)     | N/A  | N/A    | N/A    | N/A                          |
|             | Avg. Demand per Participant (Net)       | N/A  | N/A    | N/A    | N/A                          |
|             | \$Admin_per Participant (Gross)         | N/A  | N/A    | N/A    | N/A                          |
| Cumulative  | \$Admin.per kWb/year (Gross)            | N/A  | N/A    | N/A    | N/A                          |
| Annual      | \$Admin. per k/W (Green)                |      |        |        | N/A                          |
| Program     | ¢Admin. per Kvv (Gloss)                 | 6 0% | 14 204 | 14 204 | 14 204                       |
| Performance | ΦΕινίαν μει Τοταί Cosis (φ)             | 0.9% | 14.270 | 14.270 | 14.270                       |
|             | skebate per Participant (Gross)         | N/A  | N/A    | N/A    | N/A                          |



#### 2.6.3.3 Additional Virginia program data

Figure 2-30 and Figure 2-31 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-30 shows that attic insulation was the most frequently adopted measure each year of the program, installed by 93% of the participants in 2023. Air sealing was the second most adopted measure for the second year in a row, completed by 80% of the participants.<sup>38</sup>



Figure 2-30. Residential Home Retrofit Program participation by measure and year

<sup>&</sup>lt;sup>38</sup> Note that the participant counts in Figure 2-30 and Figure 2-31 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-17), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



In addition to being the most frequently adopted measure, attic insulation also accounted for the majority of savings (75%) achieved by the program in 2023, as shown in Figure 2-31.

Figure 2-31. Virginia Residential Home Retrofit Program gross annual energy savings (MWh/year) by measure and year



### 2.6.3.4 Additional North Carolina program data

There were no participants in North Carolina through 2023.



# 2.7 Residential Kits – Virginia and North Carolina

## 2.7.1 Program description

The Residential Energy Efficiency Kits Program distributes "Welcome Kits" to new residential customers in Dominion Energy's Virginia and North Carolina service territories. The "Welcome Kits" include a Tier 1 advanced power strip – or "smart strip," and an educational insert informing customers how to better manage their energy use. Also included in this

package is a questionnaire which enables customers to opt-in to Tier 2 participation to receive additional energy-saving measures. The questionnaire helps to identify which measures have the potential to produce energy savings. The Tier 2 kit includes measures such as low-flow showerheads, aerators, water heater pipe insulation, LED lamp upgrades, door and window weatherstripping, door sweeps, outlet/switch gaskets, and caulking. Customers who request these additional measures, also receive educational materials on the proper use of each measure, household energy use facts, and crosspromotional information about other Dominion Energy programs to increase customer awareness of other energy-saving opportunities within the DSM portfolio.



The Virginia SCC approved this program as part of the DSM Phase VIII programs on July 30, 2020 (Case No. PUR-2019-00201) whereas the North Carolina Utilities Commission approved this program on November 13, 2020 (Docket No. E-22, SUB 592. While EM&V tracking started in 2020 for Virginia, participation in both state's programs began in 2021.

Participation varies from year to year due to the natural variation in the number of new residential customers each year. Overall participation increased in 2023 to exceed the program's annual goal in Virginia (111%) and increase from North Carolina's 2022's participation in (86%).

# 2.7.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-19 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Assumption                                                   | Value                 |
|--------------------------------------------------------------|-----------------------|
| Target market                                                | Residential customers |
| NTG factor                                                   | 60%                   |
| Measure life (years)                                         | 14.8                  |
| Gross average annual savings per participant (kWh/year)      | 440                   |
| Gross average demand reduction per participant (kW)          | 0.13                  |
| Net average annual energy savings per participant (kWh/year) | 264                   |
| Average rebate per participant (\$US)                        | \$51.45               |

#### Table 2-19. Residential Kits Program initial planning assumptions



### 2.7.3 Assessment of program progress toward plan

This section describes the program's progress toward planned participants, energy savings, and demand reduction.

### 2.7.3.1 Key Virginia program data

Table 2-20 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L

| Category                                   | Item                             | 2021        | 2022        | 2023        | Program<br>total<br>(2020–2023) |
|--------------------------------------------|----------------------------------|-------------|-------------|-------------|---------------------------------|
| and the second second                      | Direct Rebate                    |             |             |             |                                 |
| Operations and<br>Management<br>Costs (\$) | Direct Implementation            |             |             |             |                                 |
|                                            | Direct EM&V                      |             |             |             |                                 |
|                                            | Indirect Other (Administrative)  | \$61,802    | \$51,451    | \$91,895    | \$206,689                       |
|                                            | Total <sup>40</sup>              | \$1,318,034 | \$1,232,247 | \$1,360,051 | \$3,946,449                     |
|                                            | Planned                          | \$1,950,228 | \$1,925,785 | \$1,904,691 | \$5,780,704                     |
| Total Costs (\$)                           | Variance                         | -\$632,193  | -\$693,539  | -\$544,640  | -\$1,834,255                    |
|                                            | Annual % of Planned              | 68%         | 64%         | 71%         | 68%                             |
|                                            | Total (Gross)                    | 28,113      | 26,790      | 31,398      | 86,301                          |
|                                            | Planned (Gross)                  | 28,200      | 28,200      | 28,200      | 84,600                          |
| Participants                               | Variance                         | -87         | -1,410      | 3,198       | 1,701                           |
|                                            | Annual % of Planned (Gross)      | 100%        | 95%         | 111%        | 102%                            |
|                                            | Total Gross Deemed Savings       | 3,442,999   | 3,439,997   | 3,721,439   | 10,604,435                      |
|                                            | Realization Rate                 | 100%        | 100%        | 100%        | 100%                            |
| Installed Energy                           | Realization Rate Adjustment      | 0           | 0           | 0           | 0                               |
| Savings<br>(kWh/year)                      | Adjusted Gross Savings           | 3,442,999   | 3,439,997   | 3,721,439   | 10,604,435                      |
|                                            | Net-to-Gross Ratio <sup>41</sup> | 60%         | 60%         | 60%         | 60%                             |
|                                            | Net-to-Gross Adjustment          | -1,377,200  | -1,375,999  | -1,488,576  | -4,241,774                      |
|                                            | Net Adjusted Savings             | 2,065,800   | 2,063,998   | 2,232,864   | 6,362,661                       |

#### Table 2-20. Virginia Residential Kits program performance indicators (2020-2023)<sup>39</sup>

<sup>&</sup>lt;sup>39</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>40</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>41</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 35% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category         | Item                                       | 2021      | 2022       | 2023      | Program<br>total<br>(2020–2023) |
|------------------|--------------------------------------------|-----------|------------|-----------|---------------------------------|
|                  | Planned Savings (Net)                      | 7,459,378 | 7,459,378  | 7,459,378 | 22,378,134                      |
|                  | Annual % Toward Planned Savings<br>(Net)   | 28%       | 28%        | 30%       | 28%                             |
|                  | Avg. Savings per Participant (Gross)       | 122       | 128        | 119       | 123                             |
|                  | Avg. Savings per Participant (Net)         | 73        | 77         | 71        | 74                              |
|                  | Total Gross Deemed Demand                  | 302.3     | 301.4      | 329.1     | 932.8                           |
|                  | Realization Rate                           | 100%      | 100%       | 100%      | 100%                            |
|                  | Realization Rate Adjustment                | 0         | 0          | 0         | 0                               |
|                  | Adjusted Gross Demand                      | 302       | 301        | 329       | 933                             |
| Installed        | Net-to-Gross Ratio                         | 60%       | 60%        | 60%       | 60%                             |
| Summer           | Net-to-Gross Adjustment                    | -120.9    | -120.6     | -131.6    | -373.1                          |
| Demand           | Net Adjusted Demand                        | 181       | 181        | 198       | 560                             |
| Reduction (kW)   | Planned Demand (Net)                       | 662       | 662        | 662       | 1,985                           |
|                  | Annual % Toward Planned Reduction<br>(Net) | 27%       | 27%        | 30%       | 28%                             |
|                  | Avg. Demand per Participant (Gross)        | 0.01      | 0.01       | 0.01      | 0.01                            |
|                  | Avg. Demand per Participant (Net)          | 0.01      | 0.01       | 0.01      | 0.01                            |
|                  | Tatal Cross Desmad Demand                  | 225       | 222        | 242       | 1.010                           |
|                  | Poolization Pote                           | 100%      | 100%       | 100%      | 1,010                           |
|                  | Realization Rate                           | 100%      | 100%       | 100%      | 100%                            |
|                  | Adjusted Cress Demond                      | 225       | 222        | 242       | 1 010                           |
|                  | Adjusted Gross Demand                      | 535       | 505<br>60% | 54Z       | 1,010                           |
| Installed Winter | Net to Cross Adjustment                    | 134.0     | 122.0      | 126.0     | 402.0                           |
| Demand           | Net-diusted Demand                         | -134.0    | -133.0     | -130.9    | -403.9                          |
| Reduction (kW)   | Planned Demand (Net)                       | 653.5     | 653.5      | 653.5     | 1 960 4                         |
|                  | Annual % Toward Planned Reduction<br>(Net) | 31%       | 31%        | 31%       | 31%                             |
|                  | Avg. Demand per Participant (Gross)        | 0.01      | 0.01       | 0.01      | 0.01                            |
|                  | Avg. Demand per Participant (Net)          | 0.01      | 0.01       | 0.01      | 0.01                            |
|                  |                                            |           |            |           |                                 |
|                  | \$Admin. per Participant (Gross)           | \$2       | \$2        | \$2       | \$2                             |
| Cumulative       | \$Admin. per kWh/year (Gross)              | \$0.02    | \$0.02     | \$0.02    | \$0.02                          |
| Program          | \$Admin. per kW (Gross)                    | \$210     | \$190      | \$222     | \$222                           |
| Performance      | \$EM&V per Total Costs (\$)                | 11%       | 10%        | 9%        | 9%                              |
|                  | \$Rebate per Participant (Gross)           | \$30      | \$30       | \$30      | \$30                            |



### 2.7.3.2 Key North Carolina program data

Table 2-21 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L

| Category                                   | Item                                  | 2021      | 2022      | 2023          | Program total<br>(2020–2023) |
|--------------------------------------------|---------------------------------------|-----------|-----------|---------------|------------------------------|
|                                            | Direct Rebate                         |           |           |               |                              |
| Operations and<br>Management<br>Costs (\$) | Direct Implementation                 |           |           |               |                              |
|                                            | Direct EM&V                           |           |           |               |                              |
|                                            | Indirect Other (Administrative)       | \$2,678   | \$2,899   | \$4,869       | \$10,446                     |
|                                            | Total <sup>43</sup>                   | \$57,116  | \$69,433  | \$72,060      | \$198,609                    |
|                                            | Planned                               | \$121,351 | \$122,877 | \$117,01<br>0 | \$361,238                    |
| Total Costs (\$)                           | Variance                              | -\$64,235 | -\$53,444 | -<br>\$44,950 | -\$162,628                   |
|                                            | Annual % of Planned                   | 47%       | 57%       | 62%           | 55%                          |
|                                            | T-11/0                                | 1 1 004   | 4 450     | 4.554         | 1.000                        |
|                                            | Total (Gross)                         | 1,264     | 1,453     | 1,551         | 4,268                        |
| Participants                               | Planned (Gross)                       | 1,800     | 1,800     | 1,800         | 5,400                        |
|                                            | Variance                              | -536      | -347      | -249          | -1,132                       |
|                                            | Annual % of Planned (Gross)           | 70%       | 81%       | 86%           | 79%                          |
|                                            | Total Gross Deemed Savings            | 159,580   | 182,428   | 180,331       | 522,340                      |
|                                            | Realization Rate                      | 100%      | 100%      | 100%          | 100%                         |
|                                            | Realization Rate Adjustment           | 0         | 0         | 0             | 0                            |
| Installed Energy                           | Adjusted Gross Savings                | 159,580   | 182,428   | 180,331       | 522,340                      |
| Savings                                    | Net-to-Gross Ratio <sup>44</sup>      | 60%       | 60%       | 60%           | 60%                          |
| (kWh/year)                                 | Net-to-Gross Adjustment               | -63,832   | -72,971   | -72,132       | -208,936                     |
|                                            | Net Adjusted Savings                  | 95,748    | 109,457   | 108,199       | 313,404                      |
|                                            | Planned Savings (Net)                 | 476,131   | 476,131   | 476,131       | 1,428,392                    |
|                                            | Annual % Toward Planned Savings (Net) | 20%       | 23%       | 23%           | 22%                          |

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|-----------------------------|-----------|----------|-------------------------------|------------------------|------------------------------|-----------|------------|-------|-------------|
| Table 2.21                  | North (   | Carolina | Decidential k                 | lite prod              | ram norfo                    | manco in  | dicatore / | 2020  | 2022142     |
| 1 abie 2-21.                | NOTUIN    | Saluma   | Nesiuential r                 | VILS PLOY              | ani perio                    | inance in | licators   | 2020- | -20231      |

<sup>42</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>43</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>44</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 35% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category         | Item                                    | 2021   | 2022   | 2023   | Program total<br>(2020–2023) |
|------------------|-----------------------------------------|--------|--------|--------|------------------------------|
|                  | Avg. Savings per Participant (Gross)    | 126    | 126    | 116    | 122                          |
|                  | Avg. Savings per Participant (Net)      | 76     | 75     | 70     | 73                           |
|                  | Tatal Grass Dasmad Damand               | 11     | 10     | 10     | 10                           |
|                  | Poolization Date                        | 14     | 1000   | 10     | 46                           |
|                  | Realization Rate                        | 100%   | 100%   | 100%   | 100%                         |
|                  | Realization Rate Adjustment             | 0      | 0      | 0      | 0                            |
| In stall a d     | Adjusted Gross Demand                   | 14     | 16     | 16     | 46                           |
| Installed        | Net-to-Gross Ratio                      | 60%    | 60%    | 60%    | 60%                          |
| Demand           | Net-to-Gross Adjustment                 | -5.6   | -6.5   | -6.3   | -18.4                        |
| Reduction (kW)   | Net Adjusted Demand                     | 8.4    | 9.8    | 9.5    | 27.6                         |
|                  | Planned Demand (Net)                    | 42     | 42     | 42     | 127                          |
|                  | Annual % Toward Planned Reduction (Net) | 20%    | 23%    | 23%    | 22%                          |
|                  | Avg. Demand per Participant (Gross)     | 0.01   | 0.01   | 0.01   | 0.01                         |
|                  | Avg. Demand per Participant (Net)       | 0.01   | 0.01   | 0.01   | 0.01                         |
|                  | Total Gross Deemed Demand               | 15     | 18     | 16     | 49                           |
|                  | Realization Rate                        | 100%   | 100%   | 100%   | 100%                         |
|                  | Realization Rate Adjustment             | 0      | 0      | 0      | 0                            |
|                  | Adjusted Gross Demand                   | 15     | 18     | 16     | 49                           |
| Installed Winter | Net-to-Gross Ratio                      | 60%    | 60%    | 60%    | 60%                          |
| Demand           | Net-to-Gross Adjustment                 | -6.1   | -7.2   | -6.5   | -19.7                        |
| Reduction (kW)   | Net Adjusted Demand                     | 9.1    | 10.7   | 9.7    | 29.6                         |
|                  | Planned Demand (Net)                    | 42     | 42     | 42     | 125                          |
|                  | Annual % Toward Planned Reduction (Net) | 22%    | 26%    | 23%    | 24%                          |
|                  | Avg. Demand per Participant (Gross)     | 0.01   | 0.01   | 0.01   | 0.01                         |
|                  | Avg. Demand per Participant (Net)       | 0.01   | 0.01   | 0.01   | 0.01                         |
|                  |                                         |        |        |        |                              |
|                  | \$Admin. per Participant (Gross)        | \$2    | \$2    | \$2    | \$2                          |
| Cumulative       | \$Admin. per kWh/year (Gross)           | \$0.02 | \$0.02 | \$0.02 | \$0.02                       |
| Annual           | \$Admin. per kW (Gross)                 | \$192  | \$185  | \$227  | \$227                        |
| Performance      | \$EM&V per Total Costs (\$)             | 4.8%   | 8.0%   | 7.7%   | 7.7%                         |
|                  | \$Rebate per Participant (Gross)        | \$30   | \$30   | \$30   | \$30                         |



### 2.7.3.3 Additional Virginia program data

Figure 2-32 and Figure 2-33 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Participation begins with the delivery of a smart strip as a Tier 1 measure to a new customer and accounts for a majority of program participation. Most of the energy savings are attributed to the Tier 1 smart strip. Two percent of the Tier 1 participants pursued Tier 2 measures. Tier 2 measures were dominated by lighting followed by caulking, weatherstripping, outlet/switch gaskets, and door sweeps. Of the Tier 2 measures, savings were largely driven by water distribution, lighting, and hot water pipe insulation.<sup>45</sup>



Figure 2-32. Virginia Residential Kits program participation by measure and year

<sup>&</sup>lt;sup>45</sup> Note that the participant counts in Figure 2-32 and Figure 2-33 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-20), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.





Figure 2-33. Virginia Residential Kits program gross annual energy savings (MWh/year) by measure and year



### 2.7.3.4 Additional North Carolina program data

Figure 2-34 and Figure 2-35 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K. In North Carolina, 1,551 customers participated in 2023. Most of the measures and energy savings are attributed to the Tier 1 smart strip. A minority of customers requested Tier 2 measures. Tier 2 measure savings were realized predominantly from the water distribution measure such as low-flow showerheads and faucet aerators, hot water pipe insulation, and lighting followed by outlet/switch gaskets, door sweeps, weatherstripping, and caulking.<sup>46</sup>

As with overall measure installs, most of the North Carolina program's gross annual energy savings can be attributed to the smart strips participants initially received, with over 90% of the total for the three full years since the program launched.

Figure 2-34. North Carolina Residential Kits program participation by measure and year



<sup>&</sup>lt;sup>46</sup> Note that the participant counts in Figure 2-34 and Figure 2-35 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 2-21), where a participant is only counted the first time they receive a rebate. After the first time the participant enrolls in a program, future applications do not accrue as new participants, though their savings are counted.



As with overall measure installs, most of the North Carolina program's gross annual energy savings can be attributed to the smart strips participants initially received, with over 90% (482 MWh/year) of the total for the three full years since the program launched (522 MWh). For participants opting in to receive additional measures, savings were largely attributed to water distribution (1.6%), lighting (0.6%), and hot water pipe insulation (0.5%). The remainder of installed measures had relatively minimal annual energy savings.



Figure 2-35. North Carolina Residential Kits program gross annual energy savings (MWh/year) by measure and year



# 2.8 Residential Manufactured Housing – Virginia

## 2.8.1 Program description

The Residential Manufactured Housing Program provides residential customers in manufactured housing with incentives to install energy efficiency measures. To qualify for the program, a customer must be in the Company's Virginia service territory on a residential rate schedule and must reside in a manufactured home. Qualified customers must also be responsible for the electric bill and own the residence or be able to secure permission from the owner to perform the recommended improvements.



The program offers a walk-through assessment, performed by a qualified participating contractor, and covers all energy systems in the home, as well as the building envelope, with particular attention paid to the condition of domestic hot water and HVAC systems, level of insulation, and condition of the belly board. Participating contractors must be Building Performance Institute (BPI)-certified to collect the required data needed to perform energy calculations and generate a report showing projected energy and potential cost savings specific to each customer's home. As part of the assessment, the contractor will install simple energy saving measures, such as LED lamps and water heater pipe insulation. Table 2-22 details the energy efficient measures that are offered in the program.

| Table 2-22. | Measures offered  | through R     | Residential  | Manufactured | Housing | Program      |
|-------------|-------------------|---------------|--------------|--------------|---------|--------------|
|             | moustines enteres | and a girling | toordonnan i | manarararaa  | nouonig | i i ogi airi |

| End use            | Measure                         |  |  |  |
|--------------------|---------------------------------|--|--|--|
| Domestic hot water | Domestic heat pump water heater |  |  |  |
| Refrigeration      | ENERGY STAR refrigerator        |  |  |  |
|                    | Heat pump tune-up               |  |  |  |
|                    | Heat pump upgrade               |  |  |  |
| HVAC               | Smart thermostat                |  |  |  |
|                    | Air sealing                     |  |  |  |
|                    | Duct sealing and insulation     |  |  |  |
| Whole building     | Cool roof                       |  |  |  |

The contractor will then review the findings and recommendations of the assessment report with the homeowner. Part of the contractor's responsibility is to encourage and motivate participants to move forward with the installation of the most comprehensive set of recommended energy efficiency measures. The contractor will also provide customers with general energy efficiency education and site-specific energy conservation information. This will include a review of the energy efficiency options and available measure incentives to help the customer understand the costs

and benefits of each option and to answer their questions. The contractor will also show the customer how they can find and select a quality installation contractor in the expanded network of local installation contractors.

The Virginia SCC approved this program as part of the DSM Phase VIII programs on July 30, 2020 (Case No. PUR-2019-00201) for five years from July 1, 2019, through June 30, 2024. The program officially launched on January 15, 2021.<sup>47</sup>

<sup>47</sup> Residential Manufactured Housing Program Terms and Conditions



## 2.8.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-23 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

#### Table 2-23. Residential Manufactured Housing Program planning assumptions

| Assumption                                                                 | Value                 |
|----------------------------------------------------------------------------|-----------------------|
| Target market                                                              | Residential customers |
| NTG factor                                                                 | 90%                   |
| Measure life (years)                                                       | 15.13                 |
| Gross average annual savings (kWh/year) per participant                    | 1,970.11              |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.51                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.19                  |
| Net average annual energy savings (kWh/year) per participant               | 1,773.10              |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.459                 |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.171                 |
| Average rebate (\$US) per participant                                      | \$356                 |

# 2.8.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

### 2.8.3.1 Key Virginia program data

Table 2-40 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Program participation increased significantly in 2023. The DE program manager attributed the increase to public events that were held by DE, in addition to program pamphlets and word of mouth.

| Table 2-24. Virginia Residential Manufactured Housing | Program performance indicators | (2020-2023)48 |
|-------------------------------------------------------|--------------------------------|---------------|
|-------------------------------------------------------|--------------------------------|---------------|

| Category                 | ltem                                           | 2021     | 2022     | 2023     | Program total<br>(2020–2023) |
|--------------------------|------------------------------------------------|----------|----------|----------|------------------------------|
| Operations               | Direct Rebate                                  |          |          |          |                              |
| and                      | Direct Implementation                          |          |          |          |                              |
| Management<br>Costs (\$) | Direct EM&V                                    |          |          |          |                              |
|                          | Indirect Other (Administrative)                | \$30,122 | \$26,196 | \$47,233 | \$105,673                    |
| Management<br>Costs (\$) | Direct EM&V<br>Indirect Other (Administrative) | \$30,122 | \$26,196 | \$47,233 |                              |

<sup>48</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category            | Item                                     | 2021        | 2022         | 2023         | Program total<br>(2020–2023) |
|---------------------|------------------------------------------|-------------|--------------|--------------|------------------------------|
|                     | Total <sup>49</sup>                      | \$642,418   | \$627,383    | \$699,057    | \$2,018,574                  |
| Total Costs (\$)    | Planned                                  | \$1,129,167 | \$1,733,136  | \$1,830,485  | \$4,692,788                  |
|                     | Variance                                 | -\$486,749  | -\$1,105,753 | -\$1,131,428 | -\$2,674,214                 |
|                     | Annual % of Planned                      | 57%         | 36%          | 38%          | 43%                          |
|                     | Total (Gross)                            | 3           | 3            | 554          | 560                          |
| Darticipanto        | Planned (Gross)                          | 1,000       | 2,200        | 2,400        | 5,600                        |
| Participants        | Variance                                 | -997        | -2,197       | -1,846       | -5,040                       |
|                     | Annual % of Planned (Gross)              | 0%          | 0%           | 23%          | 10%                          |
|                     | Total Gross Deemed Savings               | 916         | 310          | 118,331      | 119,556                      |
|                     | Realization Rate                         | 100%        | 100%         | 100%         | 100%                         |
|                     | Realization Rate Adjustment              | 0           | 0            | 0            | 0                            |
|                     | Adjusted Gross Savings                   | 916         | 310          | 118,331      | 119,556                      |
| Installed           | Net-to-Gross Ratio <sup>50</sup>         | 90%         | 90%          | 90%          | 90%                          |
| Energy              | Net-to-Gross Adjustment                  | -92         | -31          | -11,833      | -11,956                      |
| Savings             | Net Adjusted Savings                     | 824         | 279          | 106,498      | 107,601                      |
| (kWh/year)          | Planned Savings (Net)                    | 1,773,101   | 3,900,822    | 4,255,442    | 9,929,366                    |
|                     | Annual % Toward Planned Savings<br>(Net) | 0.05%       | 0.01%        | 2.50%        | 1.08%                        |
|                     | Avg. Savings per Participant (Gross)     | 305         | 103          | 214          | 213                          |
|                     | Avg. Savings per Participant (Net)       | 275         | 93           | 192          | <mark>1</mark> 92            |
|                     | Total Gross Deemed Demand                | 0.1         | 0.03         | 45           | 45                           |
|                     | Realization Rate                         | 100%        | 100%         | 100%         | 100%                         |
|                     | Realization Rate Adjustment              | 0           | 0            | 0            | 0                            |
|                     | Adjusted Gross Demand                    | 0.10        | 0.03         | 45           | 45                           |
| Installed           | Net-to-Gross Ratio <sup>50</sup>         | 90%         | 90%          | 90%          | 90%                          |
| Summer              | Net-to-Gross Adjustment                  | 0           | -0.003       | -4.5         | -4.5                         |
| Demand<br>Reduction | Net Adjusted Demand                      | 0.10        | 0.02         | 40           | 40                           |
| (kW)                | Planned Demand (Net)                     | 459.0       | 1,009.8      | 1,101.6      | 2,570.4                      |
|                     | Annual % Toward Planned Reduction (Net)  | 0.02%       | 0.002%       | 3.6%         | 1.6%                         |
|                     | Avg. Demand per Participant (Gross)      | 0.03        | 0.01         | 0.08         | 0.08                         |
|                     | Avg. Demand per Participant (Net)        | 0.03        | 0.01         | 0.07         | 0.07                         |

<sup>&</sup>lt;sup>49</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>50</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 97% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category    | Item                                    | 2021      | 2022      | 2023    | Program total<br>(2020–2023) |
|-------------|-----------------------------------------|-----------|-----------|---------|------------------------------|
|             |                                         |           |           |         |                              |
|             | Total Gross Deemed Demand               | 0.1       | 0.1       | 51      | 51                           |
|             | Realization Rate                        | 100%      | 100%      | 100%    | 100%                         |
|             | Realization Rate Adjustment             | 0         | 0         | 0       | 0                            |
|             | Adjusted Gross Demand                   | 0.1       | 0.1       | 51      | 51                           |
| Installed   | Net-to-Gross Ratio <sup>50</sup>        | 90%       | 90%       | 90%     | 90%                          |
| Demand      | Net-to-Gross Adjustment                 | 0         | 0         | -5.1    | -5.1                         |
| Reduction   | Net Adjusted Demand                     | 0.1       | 0.1       | 46      | 46                           |
| (kW)        | Planned Demand (Net)                    | 171       | 376       | 410     | 958                          |
|             | Annual % Toward Planned Reduction (Net) | 0.06%     | 0.01%     | 11%     | 5%                           |
|             | Avg. Demand per Participant (Gross)     | 0.04      | 0.02      | 0.09    | 0.09                         |
|             | Avg. Demand per Participant (Net)       | 0.03      | 0.02      | 0.08    | 0.08                         |
|             | \$Admin. per Participant (Gross)        | \$10,748  | \$9,740   | \$189   | \$189                        |
| Cumulative  | \$Admin. per kWh/year (Gross)           | \$35      | \$48      | \$0.88  | \$0.88                       |
| Annual      | \$Admin. per kW (Gross)                 | \$381,172 | \$523,376 | \$2,352 | \$2,352                      |
| Performance | \$EM&V per Total Costs (\$)             | 22.1%     | 18.0%     | 14.1%   | 14.1%                        |
|             | \$Rebate per Participant (Gross)        | \$15      | \$29      | \$39    | \$39                         |



### 2.8.3.2 Additional Virginia program data

Figure 2-36 and Figure 2-37 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

In 2023, HVAC tune-ups were performed by 98% of participants and accounted for 92% of energy savings, as shown in Figure 2-36 and Figure 2-37, respectively. The DE program manager stated that they intentionally targeted HVAC tune-ups as part of an ongoing trial and error strategy to increase participation and to provide maximum value to the customer.<sup>51</sup>



Figure 2-36. Residential Manufactured Housing Program participation by measure and year

<sup>&</sup>lt;sup>51</sup> Note that the participant counts in Figure 2-36 and Figure 2-37 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-24), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-37. Virginia Residential Manufactured Housing Program gross annual energy savings (MWh/year) by measure and year





# 2.9 Residential Multifamily – Virginia

## 2.9.1 Program description

The Residential Multifamily Program is available in Virginia and provides property owners and managers with on-site energy assessments of both common areas and tenant units. Following the assessment, participants receive a report detailing energy-saving improvements for individual units and common areas of the building.

The program has both residential and non-residential components. The residential component refers to the energy efficient measures installed in residential units. The non-residential component of the program covers energy-efficient measures installed in common areas, or on behalf of non-residential accounts. This section of the report discusses the residential portion of the program. The discussion of the Non-Residential Multifamily Program appears in Section 4.8.



Customers must contact a participating contractor to receive the onsite energy assessment. Customers are not considered to have fully participated in the program until a completed application form

is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application, and Dominion Energy has 90 days to process it. Table 2-25 details the energy efficient measures that are eligible for the residential component of the program.

| End use            | Measure                                               |  |  |
|--------------------|-------------------------------------------------------|--|--|
|                    | Water heater pipe insulation                          |  |  |
|                    | Water heater temperature turndown                     |  |  |
| Domostic Hot Water | Fixed showerhead up to 1.5 GPM                        |  |  |
| Domestic Hot water | Handheld showerhead up to 1.5 GPM                     |  |  |
|                    | Kitchen swivel aerator up to 1.5 GPM                  |  |  |
|                    | Bathroom aerator up to 1.5 GPM                        |  |  |
|                    | Decorative LED lamps                                  |  |  |
| Lighting           | LED globe lamps                                       |  |  |
|                    | LED downlight lamps                                   |  |  |
| Defeinentien       | Refrigerator coil brush                               |  |  |
| Refrigeration      | Refrigerator thermometer                              |  |  |
|                    | Tune-Up on heat pump system and/or central AC         |  |  |
|                    | Packaged terminal heat pump and/or central AC upgrade |  |  |
| HVAC               | Smart thermostat                                      |  |  |
|                    | Air sealing                                           |  |  |
|                    | Duct sealing                                          |  |  |
| Puilding Envelope  | Attic insulation                                      |  |  |
| Building Envelope  | Wall insulation                                       |  |  |

#### Table 2-25. Measures offered through Residential Multifamily Program



| End use                | Measure           |  |
|------------------------|-------------------|--|
|                        | Refrigerator      |  |
|                        | Room/Wall AC unit |  |
| ENERGY STAR Appliances | Clothes washer    |  |
|                        | Clothes dryer     |  |

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched on January 15, 2021.<sup>52</sup>

# 2.9.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-26 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

#### Table 2-26. Residential Multifamily Program planning assumptions

| Assumption                                                                 | Value                 |  |
|----------------------------------------------------------------------------|-----------------------|--|
| Target market                                                              | Residential customers |  |
| NTG factor                                                                 | 90%                   |  |
| Measure life (years)                                                       | 10                    |  |
| Gross average annual savings (kWh/year) per participant                    | 949                   |  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.35                  |  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.11                  |  |
| Net average annual energy savings (kWh/year) per participant               | 886                   |  |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.32                  |  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.10                  |  |
| Average rebate (\$US) per participant                                      | \$10                  |  |

## 2.9.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

### 2.9.3.1 Key Virginia program data

Table 2-27 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

<sup>52</sup> Residential Multifamily Program Terms and Conditions



| Category            | Item                                  | 2021        | 2022         | 2023        | Program total<br>(2020–2023) |
|---------------------|---------------------------------------|-------------|--------------|-------------|------------------------------|
| Operations          | Direct Rebate                         |             |              |             |                              |
| and                 | Direct Implementation                 |             |              |             |                              |
| Management          | Direct EM&V                           |             |              |             |                              |
| Costs (\$)          | Indirect Other (Administrative)       | \$29,521    | \$32,108     | \$52,349    | \$115,212                    |
|                     | Total <sup>54</sup>                   | \$620 586   | \$768 078    | \$774 765   | \$2 202 260                  |
| Total Costs<br>(\$) | Planned                               | \$1,677,601 | \$2 269 1/6  | \$2 2/1 607 | \$6 188 535                  |
| (\$)                | Variance                              | \$1,077,091 | \$1,500,168  | \$1 /66 032 | \$3,086,266                  |
| (*)                 | Annual % of Planned                   | 38%         | -\$1,500,100 | 35%         | 36%                          |
|                     |                                       | 1           |              |             |                              |
| -                   | Total (gross)                         | 9           | 1,634        | 1,273       | 2,916                        |
| Deutleleente        | Planned (gross)                       | 9,000       | 14,000       | 14,000      | 37,000                       |
| Participants        | Variance                              | -8,991      | -12,366      | -12,727     | -34,084                      |
|                     | Annual % of Planned (gross)           | 0%          | 12%          | 9%          | 8%                           |
|                     |                                       |             |              |             |                              |
|                     | Total Gross Deemed Savings            | 335         | 428,505      | 231,957     | 660,797                      |
|                     | Realization Rate                      | 100%        | 100%         | 100%        | 100%                         |
|                     | Realization Rate Adjustment           | 0           | 0            | 0           | 0                            |
|                     | Adjusted Gross Savings                | 335         | 428,505      | 231,957     | 660,797                      |
| Installed           | Net-to-Gross Ratio <sup>55</sup>      | 90%         | 90%          | 90%         | 90%                          |
| Energy              | Net-to-Gross Adjustment               | -33         | -42,851      | -23,196     | -66,080                      |
| Savings             | Net Adjusted Savings                  | 301         | 385,655      | 208,761     | 594,717                      |
| (KWII/year)         | Planned Savings (net)                 | 7,976,317   | 12,407,604   | 12,407,604  | 32,791,526                   |
|                     | Annual % Toward Planned Savings (net) | 0%          | 3%           | 2%          | 2%                           |
|                     | Avg. Savings per Participant (gross)  | 37          | 262          | 182         | 227                          |
|                     | Avg. Savings per Participant (net)    | 33          | 236          | 164         | 204                          |
|                     |                                       |             |              |             |                              |
| Installed           | Total Gross Deemed Demand             | 0           | 107          | 16          | 123                          |
| Summer              | Realization Rate                      | 100%        | 100%         | 100%        | 100%                         |
| Demand              | Realization Rate Adjustment           | 0           | 0            | 0           | 0                            |
| Reduction<br>(kW)   | Adjusted Gross Demand                 | 0           | 106.7        | 16.4        | 123.1                        |
|                     | Net-to-Gross Ratio55                  | 90%         | 90%          | 90%         | 90%                          |

#### Table 2-27. Virginia Residential Multifamily Program performance indicators (2020–2023)53

<sup>&</sup>lt;sup>53</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>54</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>55</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                        | Item                                    | 2021      | 2022   | 2023   | Program total<br>(2020–2023) |
|---------------------------------|-----------------------------------------|-----------|--------|--------|------------------------------|
|                                 | Net-to-Gross Adjustment                 | 0         | -11    | -2     | -12                          |
|                                 | Net Adjusted Demand                     | 0         | 96     | 15     | 111                          |
|                                 | Planned Demand (net)                    | 2,835     | 4,410  | 4,410  | 11,655                       |
|                                 | Annual % Toward Planned Reduction (net) | 0%        | 2.18%  | 0.33%  | 0.95%                        |
|                                 | Avg. Demand per Participant (gross)     | 0         | 0.07   | 0.01   | 0.04                         |
|                                 | Avg. Demand per Participant (net)       | 0         | 0.06   | 0.01   | 0.04                         |
|                                 |                                         |           |        |        |                              |
|                                 | Total Gross Deemed Demand               | 0         | 169    | 29     | 198                          |
|                                 | Realization Rate                        | 100%      | 100%   | 100%   | 100%                         |
|                                 | Realization Rate Adjustment             | 0         | 0      | 0      | 0                            |
|                                 | Adjusted Gross Demand                   | 0         | 168.7  | 28.8   | 197.5                        |
| Installed<br>Winter<br>Demand   | Net-to-Gross Ratio <sup>55</sup>        | 90%       | 90%    | 90%    | 90%                          |
|                                 | Net-to-Gross Adjustment                 | 0         | -17    | -3     | -20                          |
| Reduction                       | Net Adjusted Demand                     | 0         | 152    | 26     | 178                          |
| (kW)                            | Planned Demand (net)                    | 891       | 1,386  | 1,386  | 3,663                        |
|                                 | Annual % Toward Planned Reduction (net) | 0%        | 11%    | 2%     | 5%                           |
|                                 | Avg. Demand per Participant (gross)     | 0.01      | 0.10   | 0.02   | 0.07                         |
|                                 | Avg. Demand per Participant (net)       | 0         | 0.09   | 0.02   | 0.06                         |
|                                 | 1                                       |           |        |        |                              |
| Cumulative<br>Annual<br>Program | \$Admin. per Participant (gross)        | \$3,417   | \$38   | \$40   | \$40                         |
|                                 | \$Admin. per kWh/year (gross)           | \$92      | \$0.15 | \$0.17 | \$0.17                       |
|                                 | \$Admin. per kW (gross)                 | \$820,780 | \$589  | \$936  | \$936                        |
| Performance                     | \$EM&V per Total Costs (\$)             | 13.9%     | 10.7%  | 9.7%   | 9.7%                         |
|                                 | \$Rebate per Participant (gross)        | \$7       | \$53   | \$59   | \$59                         |



### 2.9.3.2 Additional Virginia program data

Figure 2-38 and Figure 2-39 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Smart thermostats were installed by 83% of participants. HVAC tune-ups and lighting measures were also adopted by 17% and 11% of participants, respectively.<sup>56</sup>



Figure 2-38. Residential Multifamily Housing Program participation by measure and year

<sup>&</sup>lt;sup>56</sup> Note that the participant counts in Figure 2-38 and Figure 2-39 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-27), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-39 shows that smart thermostats accounted for the majority (75%) of energy savings in 2023. HVAC tune-ups accounted for the second highest savings at 18%.

Figure 2-39. Virginia Residential Multifamily Housing Program gross annual energy savings (MWh/year) by measure and year





## 2.10 Residential New Construction – Virginia

### 2.10.1 Program description

The Residential New Construction Program provides incentives to home builders for the construction of new homes that are ENERGY STAR certified.<sup>57</sup> Certification requires that the whole home is energy efficient instead of individual measures. Eligible homes include single-family attached, single-family detached, and two-over-two condominiums and must be at least 15% more efficient than the state-level minimum code.



The program offers incentives that offset the costs of upgrades and Home Energy Rater services. Upgrades include improvements to building shell, HVAC performance, lighting, appliances, and domestic hot water.

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched in Virginia on January 15, 2021.

There was a significant increase in participation and energy savings in 2023. The program participation

climbed to 2,925 participants with a total savings of 7,329 MWh/yr. This is a 14% increase in participation and 43% in energy savings compared to 2022. This improvement was despite vacillations in the housing market, including significant increases in mortgage interest rates. The savings per participant increased in 2023. This was largely driven by domestic heat pump water heaters and high-efficiency HVAC equipment.

## 2.10.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-28 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

#### Table 2-28. Residential New Construction program planning assumptions

| Assumption                                                                 | Description          |  |
|----------------------------------------------------------------------------|----------------------|--|
| Target market                                                              | Residential builders |  |
| NTG factor                                                                 | 87%                  |  |
| Measure life (years)                                                       | 25                   |  |
| Gross average annual energy savings (kWh/year) per participant             | 1,603                |  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.89                 |  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.27                 |  |
| Net average annual energy savings (kWh/year) per participant               | 1,394                |  |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.77                 |  |

<sup>57</sup> Dominion Energy Residential New Construction Program website; ENERGY STAR Certified Homes website


| Assumption                                                               | Description |
|--------------------------------------------------------------------------|-------------|
| Net Average winter coincident peak demand reduction (kW) per participant | 0.23        |
| Average rebate (\$US) per participant                                    | \$859       |

#### 2.10.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.10.3.1 Key Virginia program data

Table 2-29 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                                   | Item                            | 2021         | 2022         | 2023         | Program total<br>(2020–2023) |
|--------------------------------------------|---------------------------------|--------------|--------------|--------------|------------------------------|
|                                            | Direct Rebate                   |              |              |              |                              |
| Operations and<br>Management<br>Costs (\$) | Direct Implementation           |              |              |              |                              |
|                                            | Direct EM&V                     |              |              |              |                              |
|                                            | Indirect Other (Administrative) | \$56,428     | \$112,259    | \$211,852    | \$381,822                    |
|                                            | Total <sup>59</sup>             | \$1,203,424  | \$2,688,603  | \$3,135,419  | \$7,057,530                  |
| T. (. ) O (. )                             | Planned                         | \$4,218,145  | \$4,560,431  | \$4,831,000  | \$13,609,576                 |
| Total Costs (\$)                           | Variance                        | -\$3,014,721 | -\$1,871,828 | -\$1,695,581 | -\$6,552,046                 |
|                                            | Annual % of Planned             | 29%          | 59%          | 65%          | 52%                          |
|                                            | Total (Gross)                   | 1,018        | 2,560        | 2,925        | 6,503                        |
|                                            | Planned (Gross)                 | 4,250        | 4,548        | 4,866        | 13,664                       |
| Participants                               | Variance                        | -3,232       | -1,988       | -1,941       | -7,161                       |
|                                            | Annual % of Planned (Gross)     | 24%          | 56%          | 60%          | 48%                          |
|                                            | Total Gross Deemed Savings      | 1,971,437    | 5,129,363    | 7,329,239    | 14,430,039                   |
|                                            | Realization Rate                | 100%         | 100%         | 100%         | 100%                         |
| Installed Energy                           | Realization Rate Adjustment     | 0            | 0            | 0            | 0                            |
| Savings                                    | Adjusted Gross Savings          | 1,971,437    | 5,129,363    | 7,329,239    | 14,430,039                   |
| (kWh/year)                                 | Net-to-Gross Ratio              | 87%          | 87%          | 87%          | 87%                          |
|                                            | Net-to-Gross Adjustment         | -256,287     | -666,817     | -952,801     | -1,875,905                   |
|                                            | Net Adjusted Savings            | 1,715,150    | 4,462,546    | 6,376,438    | 12,554,134                   |

Table 2-29. Virginia Residential New Construction Program performance indicators (2020–2023)58

<sup>58</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>59</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                 | Item                                           | 2021           | 2022      | 2023         | Program total<br>(2020–2023) |
|--------------------------|------------------------------------------------|----------------|-----------|--------------|------------------------------|
|                          | Planned Savings (Net)                          | 5,926,305      | 6,341,844 | 6,785,271    | 19,053,420                   |
|                          | Annual Percent Toward Planned<br>Savings (Net) | 29%            | 70%       | 93%          | 66%                          |
|                          | Avg. Savings per Participant (Gross)           | 1,937          | 2,004     | 2,506        | 2,219                        |
|                          | Avg. Savings per Participant (Net)             | 1,685          | 1,743     | 2,180        | 1,931                        |
|                          | Total Gross Demand Reduction                   | 883.5          | 2,285.0   | 3,003.7      | 6,172.1                      |
|                          | Realization Rate                               | 100%           | 100%      | 100%         | 100%                         |
|                          | Realization Rate Adjustment                    | 0              | 0         | 0            | 0                            |
|                          | Adjusted Gross Demand Reduction                | 884            | 2,285     | 3,004        | 6,172                        |
|                          | Net-to-Gross Ratio                             | 87%            | 87%       | 87%          | 87%                          |
| Summer                   | Net-to-Gross Adjustment                        | -114.9         | -297.0    | -390.5       | -802.4                       |
| Demand                   | Net Adjusted Demand Reduction                  | 769            | 1,988     | 2,613        | 5,370                        |
| Reduction (kW)           | Planned Demand (Net)                           | 3,391          | 3,522     | 3,768        | 10,580                       |
|                          | Annual % Toward Planned Demand (Net)           | 23.4%          | 56.5%     | 69.4%        | 50.6%                        |
|                          | Avg. Peak Demand per Participant<br>(Gross)    | 0.9            | 0.9       | 1.0          | 0.9                          |
|                          | Avg. Demand per Participant (Net)              | 0.8            | 0.8       | 0.9          | 0.8                          |
|                          | Total Gross Demand Reduction                   | 342.6          | 969.7     | 1,675.3      | 2,987.7                      |
|                          | Realization Rate                               | 100%           | 100%      | 100%         | 100%                         |
|                          | Realization Rate Adjustment                    | 0              | 0         | 0            | 0                            |
|                          | Adjusted Gross Demand Reduction                | 343            | 970       | 1,675        | 2,988                        |
|                          | Net-to-Gross Ratio                             | 87%            | 87%       | 87%          | 87%                          |
| Installed Winter         | Net-to-Gross Adjustment                        | -44.5          | -126.1    | -217.8       | -388.4                       |
| Demand<br>Reduction (kW) | Net Adjusted Demand Reduction                  | 298.1          | 843.7     | 1,457.5      | 2,599.3                      |
| neudonom (ktt)           | Planned Demand (Net)                           | 998            | 1,068     | 1,143        | 3,210                        |
|                          | Annual % Toward Planned Demand (Net)           | 30%            | 79%       | 128%         | 81%                          |
|                          | Avg. Peak Demand per Participant<br>(Gross)    | 0.3            | 0.4       | 0.6          | 0.5                          |
|                          | Avg. Demand per Participant (Net)              | 0.3            | 0.3       | 0.5          | 0.4                          |
|                          | \$Admin per Participant (Gross)                | \$57           | ¢19       | \$50         | \$50                         |
| Cumulative               | \$4dmin, per l'attopant (Gross)                | \$0.03         | \$0.02    | \$0.03       | \$0.03                       |
| Annual                   | \$Admin. per kW/(Gross)                        | \$0.05<br>\$65 | ¢5.02     | 0.00<br>\$62 | ¢0.00                        |
| Performance              | \$EM&V per Total Costs (\$)                    | 0.7%           | 7 0%      | 6 Q%         | 6 Q%                         |
|                          | \$Rebate per Participant (Gross)               | \$838          | \$837     | \$840        | \$840                        |



#### 2.10.3.2 Additional Virginia program data

Figure 2-40 and Figure 2-41 show participation and gross annual energy savings by measure and year in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

In 2023, the program participation, savings per participant and overall savings continued to increase compared to prior years and the program saw a 14% increase in participation between 2022 and 2023. The single family detached participation increased more than townhouses and duplexes.<sup>60</sup>



Figure 2-40. Virginia Residential New Construction Program participation by measure and year

<sup>&</sup>lt;sup>60</sup> Note that the participant counts in Figure 2-40 and Figure 2-41 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-29), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-41. Virginia Residential New Construction Program gross annual energy savings (MWh/year) by measure and year





Figure 2-42 and Figure 2-43 show participation and gross annual energy savings by building type and year. The 2023 program year saw a 43% increase in savings over 2022. This increase is attributed to the increase in participation and an increase in savings per participant. Savings per participation increased across all building types.



Figure 2-42. Virginia Residential New Construction Program participation by building type and year



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Figure 2-43. Virginia Residential New Construction Program gross annual energy savings (MWh/year) by building type and year





Figure 2-44 shows Virginia gross annual energy savings per participant by end use and year. Figure 2-45 shows the total energy savings for each end-use. The program level savings increased across all end-uses. The increased savings is due to both an increase in participants and the savings per participant. Since savings are achieved at the whole-building level, they are not disaggregated by individual equipment or lighting. Therefore, end-use level savings offer a good way to see where savings are achieved. For the Residential New Construction Program, space heating surpassed lighting and appliances savings in 2023. This is due to higher efficiency heat pump HVAC systems and building shell measures. The lighting and appliance savings remained about the same as 2022.

In 2021 and 2022, the domestic hot water end use had negative average savings. In 2023 the savings was 37 kWh/participant. While some homes have domestic hot water savings, many homes installed hot water heaters that are less efficient than the program's assumed baseline efficiency, although still higher than federal code. The positive savings reflects that's more domestic heat pump water heaters are being installed in the program.







Figure 2-45. Virginia Residential New Construction Program gross annual energy savings (MWh/year) by end use and year





# 2.11 Residential Thermostat Purchase and WeatherSmart – Virginia and North Carolina

## 2.11.1 Program description

The Residential Smart Thermostat Purchase and WeatherSmart Program<sup>™</sup> has two components. The Residential Smart Thermostat Purchase component provides an incentive for purchasing and installing up to two ENERGY STAR<sup>®</sup> certified smart thermostats. An additional incentive is available for participation in "WeatherSmart," a thermostat optimization program. The WeatherSmart component provides an annual incentive for customers who allow remote optimization of their



smart thermostat temperature setpoints and runtimes. WeatherSmart customers also receive a monthly report with personalized energy-saving tips. Customers can participate in one of the two components, or both if eligible.

To participate in either component of this program, the customer must be a Dominion Energy Services residential customer residing in a single-family detached, attached, or manufactured home. The smart thermostat purchase component is limited to heat pump systems. Customers with either a heat pump or a central air-conditioner are eligible to participate in WeatherSmart.

The SCC approved this program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No.PUR-2019-00201). As a result, the planned implementation schedule was delayed a year.<sup>61</sup> The program officially launched on April 15, 2021. It was approved by the NCUC in North Carolina on February 9, 2019 (Docket No. E-22, SUB 594).<sup>62</sup>

## 2.11.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-30 and Table 2-31 outline Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Residential Smart Thermostat Purchase Program is the count of rebated thermostats. The definition of participants for the Residential Thermostat WeatherSmart Program is the count of unique account numbers.

Table 2-30. Residential Smart Thermostat Purchase Program planning assumptions

| Assumption                                                                 | Value                 |
|----------------------------------------------------------------------------|-----------------------|
| Target market                                                              | Residential customers |
| NTG factor                                                                 | 80%                   |
| Measure life (years)                                                       | 10                    |
| Gross average annual energy savings (kWh/year) per participant             | 538                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.05                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.13                  |

<sup>&</sup>lt;sup>61</sup> <u>Virginia Residential Smart Thermostat Purchase Program Terms and Conditions</u>.

<sup>62</sup> North Carolina Residential Smart Thermostat Purchase Program terms and Conditions.



| Assumption                                                               | Value   |
|--------------------------------------------------------------------------|---------|
| Net average annual energy savings (kWh/year) per participant             | 430     |
| Net average summer coincident peak demand reduction (kW) per participant | 0.04    |
| Net average winter coincident peak demand reduction (kW) per participant | 0.10    |
| Average rebate (\$US) per participant                                    | \$50.00 |

#### Table 2-31. Residential Thermostat WeatherSmart Program planning assumptions

| Assumption                                                                 | Value                 |
|----------------------------------------------------------------------------|-----------------------|
| Target market                                                              | Residential customers |
| NTG factor                                                                 | 95%                   |
| Measure life (years)                                                       | 1                     |
| Gross average annual energy savings (kWh/year) per participant             | 303                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.05                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.05                  |
| Net average annual energy savings (kWh/year) per participant               | 242                   |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.05                  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.05                  |
| Average annual rebate (\$US) per participant                               | \$10                  |

## 2.11.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.11.3.1 Key Virginia program data

Table 2-32 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

## Table 2-32. Virginia Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2020–2023)<sup>63</sup>

| Category          | Item                            | 2021     | 2022     | 2023     | Program Total<br>(2020–2023) |
|-------------------|---------------------------------|----------|----------|----------|------------------------------|
| Operations<br>and | Direct Rebate                   |          |          |          |                              |
|                   | Direct Implementation           |          |          |          |                              |
| Management        | Direct EM&V                     |          |          |          |                              |
| Costs (\$)        | Indirect Other (Administrative) | \$47,014 | \$47,874 | \$44,609 | \$143,750                    |

<sup>&</sup>lt;sup>63</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category        | Item                                           | 2021        | 2022        | 2023        | Program Total<br>(2020–2023) |
|-----------------|------------------------------------------------|-------------|-------------|-------------|------------------------------|
|                 | Total <sup>64</sup>                            | \$1,002,656 | \$1,146,575 | \$660,213   | \$2,909,116                  |
| Total Costs     | Planned                                        | \$1,176,343 | \$1,191,322 | \$1,230,064 | \$3,597,729                  |
| (\$)            | Variance                                       | -\$173,686  | -\$44,747   | -\$569,850  | -\$688,613                   |
|                 | Annual % of Planned                            | 85%         | 96%         | 54%         | 81%                          |
|                 | Total (Gross)                                  | 5,321       | 7,638       | 6,377       | 19,336                       |
| Darticipante 65 | Planned (Gross)                                | 4,791       | 9,233       | 8,487       | 22,511                       |
| Participants    | Variance                                       | 530         | -1,595      | -2,110      | -3,175                       |
|                 | Annual % of Planned (Gross)                    | 111%        | 83%         | 75%         | 86%                          |
| -               | Total Gross Deemed Savings                     | 1,436,716   | 1,926,560   | 1.381.802   | 4,745,079                    |
|                 | Realization Rate                               | 100%        | 100%        | 100%        | 100%                         |
|                 | Realization Rate Adjustment                    | 0           | 0           | 0           | 0                            |
|                 | Adjusted Gross Savings                         | 1,436,716   | 1,926,560   | 1,381,802   | 4,745,079                    |
| Installed       | Net-to-Gross Ratio <sup>67</sup>               | 82%         | 83%         | 86%         | 83%                          |
| Energy          | Net-to-Gross Adjustment                        | -252,770    | -337,123    | -200,208    | -790,101                     |
| Savings         | Net Adjusted Savings                           | 1,183,947   | 1,589,437   | 1,181,594   | 3,954,978                    |
| (kWh/year)66    | Planned Savings (Net)                          | 1,984,825   | 3,816,282   | 3,557,933   | 9,359,040                    |
|                 | Annual Percent Toward Planned Savings<br>(Net) | 60%         | 42%         | 33%         | 42%                          |
|                 | Avg. Savings per Participant (Gross)           | 270         | 252         | 217         | 245                          |
|                 | Avg. Savings per Participant (Net)             | 223         | 208         | 185         | 205                          |
|                 | Total Gross Demand Reduction <sup>68</sup>     | 225         | 305         | 556         | 1.086                        |
| 1.4.6           | Realization Rate                               | 100%        | 100%        | 100%        | 100%                         |
| Installed       | Realization Rate Adjustment                    | 0           | 0           | 0           | 0                            |
| Demand          | Adjusted Gross Demand Reduction                | 225         | 305         | 556         | 1.086                        |
| Reduction       | Net-to-Gross Ratio <sup>67</sup>               | 95%         | 95%         | 95%         | 95%                          |
| (kW)            | Net-to-Gross Adjustment                        | -11         | -15         | -28         | -54                          |
|                 | Net Adjusted Demand Reduction                  | 213.6       | 290.0       | 528.3       | 1,032.0                      |

<sup>64</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>65</sup> The method used to count participants in 2021 was changed in 2022. In 2021, participants were quantified at the account level, in 2022 participants were quantified at the measure, or thermostat level. Changes in total participants was also adjusted to account for the sub-group of enrolled customers, who unenrolled, and re-enrolled.

<sup>66</sup> The table reflects metrics for both the Residential Smart Thermostat Purchase and WeatherSmart components. For the Purchase component, 2021 savings were calculated at the thermostat level, rather than at the account (or household level), which overstated 2021 savings. As a result, in this June 15, 2023, report, the 2021 gross installed energy savings (kWh/year) for Purchase was adjusted.

<sup>67</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 81% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology

<sup>68</sup> In 2022 DNV corrected the summer demand reduction calculations for the WeatherSmart component of this program. These changes resulted in an increase in summer demand reduction.



| Category    | Item                                       | 2021   | 2022   | 2023   | Program Total<br>(2020–2023) |
|-------------|--------------------------------------------|--------|--------|--------|------------------------------|
|             | Planned Demand (Net)                       | 226    | 438    | 397    | 1,060                        |
|             | Annual % Toward Planned Demand (Net)       | 94%    | 66%    | 133%   | 97%                          |
|             | Avg. Peak Demand per Participant (Gross)   | 0.04   | 0.04   | 0.09   | 0.06                         |
|             | Avg. Demand per Participant (Net)          | 0.04   | 0.04   | 0.08   | 0.05                         |
|             | Total Gross Demand Reduction <sup>69</sup> | 42     | 60     | 76     | 178                          |
|             | Realization Rate                           | 100%   | 100%   | 100%   | 100%                         |
|             | Realization Rate Adjustment                | 0      | 0      | 0      | 0                            |
| Installed   | Adjusted Gross Demand Reduction            | 41     | 60     | 76     | 178                          |
| Winter      | Net-to-Gross Ratio <sup>67</sup>           | 95%    | 95%    | 95%    | 95%                          |
| Demand      | Net-to-Gross Adjustment                    | -2     | -3     | -4     | -9                           |
| Reduction   | Net Adjusted Demand Reduction              | 40     | 58     | 72     | 170                          |
| (KVV)       | Planned Demand (Net)                       | 345    | 660    | 635    | 1,639                        |
|             | Annual % Toward Planned Demand (Net)       | 12%    | 9%     | 11%    | 10%                          |
|             | Avg. Peak Demand per Participant (Gross)   | 0.01   | 0.01   | 0.01   | 0.01                         |
|             | Avg. Demand per Participant (Net)          | 0.01   | 0.01   | 0.01   | 0.01                         |
|             | \$Admin. per Participant (Gross)           | \$10   | \$8    | \$7    | \$7                          |
| Annual      | \$Admin. per kWh/year (Gross)              | \$0.04 | \$0.03 | \$0.03 | \$0.03                       |
| Program     | \$Admin. per kW (Gross)                    | \$228  | \$187  | \$132  | \$132                        |
| Performance | \$EM&V per Total Costs (\$)                | 15.3%  | 13.1%  | 13.9%  | 13.9%                        |
|             | \$Rebate per Participant (Gross)           | \$72   | \$68   | \$51   | \$51                         |

#### 2.11.3.2 Key North Carolina program data

Table 2-33 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-33. North Carolina Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2021–2023)<sup>63</sup>

| Category         | Item                            | 2021     | 2022     | 2023     | Program Total<br>(2021–2023) |
|------------------|---------------------------------|----------|----------|----------|------------------------------|
| Operations       | Direct Rebate                   |          |          |          |                              |
| and              | Direct Implementation           |          |          |          |                              |
| Management       | Direct EM&V                     |          |          |          |                              |
| Costs (\$)       | Indirect Other (Administrative) | \$900    | \$2,125  | \$2,108  | \$5,133                      |
| Total Costs (\$) | Total <sup>64</sup>             | \$19 202 | \$50,894 | \$31,196 | \$101.292                    |

<sup>69</sup> In 2022 DNV corrected the winter demand reduction calculations for the WeatherSmart component of this program. These changes resulted in an increase in winter demand reduction.



| Category                   | Item                                           | 2021      | 2022      | 2023      | Program Total<br>(2021–2023) |
|----------------------------|------------------------------------------------|-----------|-----------|-----------|------------------------------|
|                            | Planned                                        | \$73,197  | \$76,014  | \$75,566  | \$224,776                    |
|                            | Variance                                       | -\$53,995 | -\$25,119 | -\$44,370 | -\$123,484                   |
|                            | Annual % of Planned                            | 26%       | 67%       | 41%       | 45%                          |
|                            | Total (Gross)                                  | 71        | 265       | 230       | 566                          |
| Carrie Carrie              | Planned (Gross)                                | 306       | 589       | 542       | 1,437                        |
| Participants <sup>65</sup> | Variance                                       | -235      | -324      | -312      | -871                         |
|                            | Annual % of Planned (Gross)                    | 23%       | 45%       | 42%       | 39%                          |
| 0                          |                                                |           |           |           | 100 100                      |
|                            | Total Gross Deemed Savings                     | 19,412    | 80,592    | 69,185    | 169,189                      |
|                            | Realization Rate                               | 100%      | 100%      | 100%      | 100%                         |
|                            | Realization Rate Adjustment                    | 0         | 0         | 0         | 0                            |
|                            | Adjusted Gross Savings                         | 19,412    | 80,592    | 69,185    | 169,189                      |
| Installed                  | Net-to-Gross Ratio <sup>67</sup>               | 85%       | 83%       | 87%       | 85%                          |
| Energy                     | Net-to-Gross Adjustment                        | -2,851    | -13,934   | -9,181    | -25,966                      |
| Savings                    | Net Adjusted Savings                           | 16,560    | 66,658    | 60,004    | 143,223                      |
| (Kwwinyear)                | Planned Savings (Net)                          | 126,775   | 243,449   | 227,226   | 597,450                      |
|                            | Annual Percent Toward Planned<br>Savings (Net) | 13%       | 27%       | 26%       | 24%                          |
|                            | Avg. Savings per Participant (Gross)           | 273       | 304       | 301       | 299                          |
|                            | Avg. Savings per Participant (Net)             | 233       | 252       | 261       | 253                          |
|                            | Total Gross Demand Reduction <sup>68</sup>     | 9         | 40        | 40        | 65                           |
|                            | Realization Rate                               | 100%      | 100%      | 100%      | 100%                         |
|                            | Realization Rate Adjustment                    | 0         | 0         | 0         | 0                            |
|                            | Adjusted Gross Demand Reduction                | 8.8       | 16.4      | 39.5      | 64.6                         |
| Installed                  | Net-to-Gross Ratio <sup>67</sup>               | 95%       | 95%       | 95%       | 95%                          |
| Summer                     | Net-to-Gross Adjustment                        | -0.4      | -0.8      | -2.0      | -3.2                         |
| Demand                     | Net Adjusted Demand Reduction                  | 8         | 16        | 38        | 61                           |
| Reduction                  | Planned Demand (Net)                           | 15        | 28        | 25        | 68                           |
| (KW)                       | Annual % Toward Planned Demand<br>(Net)        | 56%       | 56%       | 148%      | 91%                          |
|                            | Avg. Peak Demand per Participant<br>(Gross)    | 0.1       | 0.06      | 0.2       | 0.1                          |
|                            | Avg. Demand per Participant (Net)              | 0.1       | 0.06      | 0.2       | 0.1                          |
|                            |                                                |           |           |           |                              |
| Installed                  | Total Gross Demand Reduction <sup>69</sup>     | 0.7       | 2.1       | 3.2       | 6.0                          |
| Winter                     | Realization Rate                               | 100%      | 100%      | 100%      | 100%                         |
| Demand                     | Realization Rate Adjustment                    | 0         | 0         | 0         | 0                            |
| Reduction                  | Adjusted Gross Demand Reduction                | 0.7       | 2.1       | 3.2       | 6.0                          |
| (kW)                       | Net-to-Gross Ratio <sup>67</sup>               | 95%       | 95%       | 95%       | 95%                          |



| Category                         | Item                                        | 2021   | 2022   | 2023   | Program Total<br>(2021–2023) |
|----------------------------------|---------------------------------------------|--------|--------|--------|------------------------------|
|                                  | Net-to-Gross Adjustment                     | 0      | -0.1   | -0.2   | -0.3                         |
|                                  | Net Adjusted Demand Reduction               | 0.7    | 2.0    | 3.0    | 5.7                          |
|                                  | Planned Demand (Net)                        | 23     | 42     | 41     | 104                          |
|                                  | Annual % Toward Planned Demand (Net)        | 3%     | 5%     | 7%     | 5%                           |
|                                  | Avg. Peak Demand per Participant<br>(Gross) | 0.01   | 0.01   | 0.01   | 0.01                         |
|                                  | Avg. Demand per Participant (Net)           | 0.01   | 0.01   | 0.01   | 0.01                         |
|                                  | \$Admin. per Participant (Gross)            | \$13   | \$9    | \$9    | \$9                          |
| Cumulative                       | \$Admin. per kWh/year (Gross)               | \$0.05 | \$0.03 | \$0.03 | \$0.03                       |
| Annual<br>Program<br>Performance | \$Admin. per kW (Gross)                     | \$103  | \$120  | \$79   | \$79                         |
|                                  | \$EM&V per Total Costs (\$)                 | 10.5%  | 14.1%  | 16.3%  | 16.3%                        |
|                                  | \$Rebate per Participant (Gross)            | \$61   | \$69   | \$48   | \$48                         |



#### 2.11.3.3 Additional Virginia program data

Figure 2-46 and Figure 2-47 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-46. Virginia Residential Smart Thermostat Purchase and WeatherSmart<sup>SM</sup> participation by measure and year





Figure 2-47. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program gross annual energy savings (MWh/year) by measure and year





Figure 2-48 and Figure 2-49 show participation and gross annual energy savings by building type and year.

Figure 2-48. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program participation by building type and year





Figure 2-49. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program gross annual energy savings (MWh/year) by building type and year



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#### 2.11.3.4 Additional North Carolina program data

Figure 2-50 and Figure 2-51 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 2-50. North Carolina Residential Smart Thermostat Purchase WeatherSmart participation by measure and year





Figure 2-51. North Carolina Smart Thermostat Purchase and WeatherSmart gross annual energy savings (MWh/year) by measure and year





Figure 2-61 and Figure 2-53 show the program's participation and gross annual and gross annual energy savings by building type. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 2-52. North Carolina Smart Thermostat Purchase and WeatherSmart gross participation by building type and year





Figure 2-53. North Carolina Residential Smart Thermostat Purchase and WeatherSmart gross annual energy savings (MWh/year) by building type and year





## 2.12 Residential Smart Home – Virginia and North Carolina

### 2.12.1 Program description

The Smart Home Program connects residential customers with smart home technology to make their homes more convenient, personalized and energy efficient. For most of 2023 the smart home technologies were bundled into a convenient Smart Home kit. As of late 2023, customers have the option to build a custom kit that includes all eligible technologies (with a minimum of two technologies). The kits ensure that the customer benefits from a selection of fully integrated and compatible smart products.

Program participants must be Dominion Energy Services residential customers living in single-family detached or



single-family attached residences (e.g., townhomes). To qualify for the Program, customers must also be the parties responsible for the electric bill and either own the home or otherwise be able to secure permission to complete measures. The eligible improvements include several options among the technologies listed below which vary by cost and available features.

- Smart plugs
- Motion Sensor
- Smart thermostats
- LED lamps
- Power strips
- Smart home hub
- Home energy monitor
- Home energy monitor with solar photovoltaic option

The Virginia SCC approved this program as part of the DSM Phase IX programs on September 7, 2021 (Case No. PUR-2020-00274) for a five-year period from January 1, 2022, through December 31, 2026. The Virginia program officially launched on January 1, 2022.<sup>70</sup> The North Carolina Utilities Commission approved this Program on March 18, 2022 (Docket No. E-22, SUB 618). The North Carolina program officially launched on August 1, 2022.<sup>71</sup> In 2023, both the Virginia and North Carolina programs achieved 1% of their planned participation levels.

## 2.12.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-34 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.

<sup>70</sup> Virginia Residential Smart Home Program - Terms and Conditions.

<sup>71</sup> North Carolina Smart Home Program - Terms and Conditions.



#### Table 2-34. Residential Smart Home Program planning assumptions

| Assumption                                                                 | Description           |  |
|----------------------------------------------------------------------------|-----------------------|--|
| Target market                                                              | Residential customers |  |
| NTG factor                                                                 | 85%                   |  |
| Measure life (years)                                                       | 10.35                 |  |
| Gross average annual energy savings (kWh/year) per participant             | 1391                  |  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.34                  |  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.21                  |  |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.29                  |  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.18                  |  |
| Net average annual energy savings (kWh/year) per participant               | 1182                  |  |
| Average rebate (US\$) per participant                                      | 147                   |  |

## 2.12.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.12.3.1 Key Virginia program data

Table 2-35 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 0 25  | Minalpia Decidential  | Ownerst Hames Due  |                   | In dia term /0004 0000172 |
|-------------|-----------------------|--------------------|-------------------|---------------------------|
| Table 2-35. | virdinia Residentiai  | Smart Home Pro     | gram performance  | Indicators (2021-2023)**  |
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| Category              | Item                            | 2021    | 2022         | 2023         | Program total<br>(2021–2023) |
|-----------------------|---------------------------------|---------|--------------|--------------|------------------------------|
| Or and in second      | Direct Rebate                   |         |              |              |                              |
| Operations and        | Direct Implementation           |         |              |              |                              |
| Management Costs (\$) | Direct EM&V                     |         |              |              |                              |
| (*)                   | Indirect Other (Administrative) | \$425   | \$30,096     | \$39,596     | \$70,117                     |
|                       |                                 |         |              |              |                              |
|                       | Total <sup>73</sup>             | \$9,058 | \$720,794    | \$586,023    | \$1,315,876                  |
| Total Casta (\$)      | Planned                         | \$0     | \$2,053,050  | \$2,329,743  | \$4,382,793                  |
| Total Costs (\$)      | Variance                        | \$9,058 | -\$1,332,256 | -\$1,743,719 | -\$3,066,917                 |
|                       | Annual % of Planned             | N/A     | 35%          | 25%          | 30%                          |
|                       |                                 |         |              |              |                              |
|                       | Total (Gross)                   | N/A     | 15           | 47           | 62                           |
| Dertisinento          | Planned (Gross)                 | N/A     | 4,826        | 7,239        | 12,065                       |
| Faricipants           | Variance                        | N/A     | -4,811       | -7,192       | -12,003                      |
|                       | Annual % of Planned (Gross)     | N/A     | 0.3%         | 1%           | 1%                           |

<sup>&</sup>lt;sup>72</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>73</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category           | Item                                        | 2021 | 2022      | 2023      | Program total<br>(2021–2023) |
|--------------------|---------------------------------------------|------|-----------|-----------|------------------------------|
|                    |                                             |      |           |           |                              |
|                    | Total Gross Deemed Savings                  | N/A  | 8,087     | 22,616    | 30,703                       |
|                    | Realization Rate                            | N/A  | 100%      | 100%      | 100%                         |
|                    | Realization Rate Adjustment                 | N/A  | N/A       | N/A       | N/A                          |
|                    | Adjusted Gross Savings                      | N/A  | 8,087     | 22,616    | 30,703                       |
|                    | Net-to-Gross Ratio <sup>74</sup>            | N/A  | 85%       | 85%       | 85%                          |
| Installed Energy   | Net-to-Gross Adjustment                     | N/A  | -1,213    | -3,392    | -4,605                       |
| Savings (kWh/year) | Net Adjusted Savings                        | N/A  | 6,874     | 19,224    | 26,098                       |
|                    | Planned Savings (Net)                       | N/A  | 5,706,021 | 8,559,032 | 14,265,053                   |
|                    | Annual % Toward Planned<br>Savings (Net)    | N/A  | 0.12%     | 0.22%     | 0.18%                        |
|                    | Avg. Savings per Participant<br>(Gross)     | N/A  | 539       | 481       | 495                          |
|                    | Avg. Savings per Participant (Net)          | N/A  | 458       | 409       | 421                          |
|                    |                                             |      |           |           |                              |
|                    | Total Gross Deemed Demand                   | N/A  | 0.5       | 1.1       | 1./                          |
|                    | Realization Rate                            | N/A  | 100%      | 100%      | 100%                         |
|                    | Realization Rate Adjustment                 | N/A  | N/A       | N/A       | N/A                          |
|                    | Adjusted Gross Demand                       | N/A  | 0.5       | 1.1       | 1.7                          |
|                    | Net-to-Gross Ratio <sup>74</sup>            | N/A  | 85%       | 85%       | 85%                          |
| Installed Summer   | Net-to-Gross Adjustment                     | N/A  | -0.1      | -0.2      | -0.3                         |
| Demand Reduction   | Net Adjusted Demand                         | N/A  | 0.4       | 1.0       | 1.4                          |
| ((()))             | Planned Demand (Net)                        | N/A  | 1,398.4   | 2,097.7   | 3,496.1                      |
|                    | Annual % Toward Planned<br>Demand (Net)     | N/A  | 0.03%     | 0.05%     | 0.04%                        |
|                    | Avg. Peak Demand per Participant<br>(Gross) | N/A  | 0.04      | 0.02      | 0.03                         |
|                    | Avg. Demand per Participant (Net)           | N/A  | 0.03      | 0.02      | 0.02                         |
|                    | Total Gross Deemed Demand                   | N/A  | 29        | 12        | 4.0                          |
|                    | Realization Rate                            | N/A  | 100%      | 100%      | 100%                         |
|                    | Realization Rate Adjustment                 | N/A  | N/A       | N/A       | N/A                          |
|                    | Adjusted Gross Demand                       | N/A  | 29        | 12        | 4.0                          |
| Demand Reduction   | Net-to-Gross Ratio <sup>74</sup>            | N/A  | 85%       | 85%       | 85%                          |
| (kW)               | Net-to-Gross Adjustment                     | N/A  | _0.4      | -0.2      | -0.6                         |
|                    | Net Adjusted Demand                         | N/A  | 24        | 1.0       | -0.0                         |
|                    | Planned Demand (Net)                        | N/A  | 854       | 1 281     | 2 136                        |
|                    | Annual % Toward Planned                     | N/A  | 0.29%     | 0.08%     | 0.16%                        |

<sup>&</sup>lt;sup>74</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category               | Item                                        | 2021  | 2022     | 2023     | Program total<br>(2021–2023) |
|------------------------|---------------------------------------------|-------|----------|----------|------------------------------|
|                        | Demand (Net)                                |       |          |          |                              |
|                        | Avg. Peak Demand per Participant<br>(Gross) | N/A   | 0.2      | 0.02     | 0.07                         |
|                        | Avg. Demand per Participant (Net)           | N/A   | 0.2      | 0.02     | 0.06                         |
|                        |                                             |       |          |          |                              |
| 5.000                  | \$Admin. per Participant (Gross)            | N/A   | \$2,035  | \$1,131  | \$1,131                      |
| Cumulative Annual      | \$Admin. per kWh/year (Gross)               | N/A   | \$4      | \$2      | \$2                          |
| Program<br>Performance | \$Admin. per kW (Gross)                     | N/A   | \$57,960 | \$41,848 | \$41,848                     |
|                        | \$EM&V per Total Costs (\$)                 | 49.0% | 6.8%     | 6.5%     | 6.5%                         |
|                        | \$Rebate per Participant (Gross)            | N/A   | \$57     | \$58     | \$58                         |

## 2.12.3.2 Key North Carolina program data

Table 2-36 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category              | Item                             | 2022    | 2023       | Program total<br>(2022–2023) |
|-----------------------|----------------------------------|---------|------------|------------------------------|
| 2                     | Direct Rebate                    |         |            |                              |
| Operations and        | Direct Implementation            |         |            |                              |
| Costs (\$)            | Direct EM&V                      |         |            |                              |
|                       | Indirect Other (Administrative)  | 689     | \$2,409    | \$3,098                      |
|                       | Total <sup>73</sup>              | 16,505  | \$35,651   | \$52,155                     |
| Total Costs (\$)      | Planned                          | 52,623  | \$143,122  | \$195,745                    |
| Total Costs (\$)      | Variance                         | -36,119 | -\$107,471 | -\$143,590                   |
|                       | Annual % of Planned              | 31%     | 25%        | 27%                          |
|                       | Total (Gross)                    | 1       | 1          | 2                            |
|                       | Planned (Gross)                  | 308     | 462        | 770                          |
| Participants          | Variance                         | -307    | -461       | -768                         |
|                       | Annual % of Planned (Gross)      | 0.3%    | 0.2%       | 0.3%                         |
|                       | Total Gross Deemed Savings       | 383     | 295        | 679                          |
|                       | Realization Rate                 | 100%    | 100%       | 100%                         |
| Installed Energy      | Realization Rate Adjustment      | 0       | 0          | 0                            |
| Savings<br>(kWh/vear) | Adjusted Gross Savings           | 383     | 295        | 679                          |
| ()                    | Net-to-Gross Ratio <sup>74</sup> | 85%     | 85%        | 85%                          |
|                       | Net-to-Gross Adjustment          | -58     | -44        | -102                         |

Table 2-36. North Carolina Residential Smart Home Program performance indicators (2022-2023)72



| Category         | Item                                     | 2022     | 2023     | Program total<br>(2022–2023) |
|------------------|------------------------------------------|----------|----------|------------------------------|
|                  | Net Adjusted Savings                     | 326      | 251      | 577                          |
|                  | Planned Savings (Net)                    | 364,164  | 546,246  | 910,410                      |
|                  | Annual % Toward Planned Savings (Net)    | 0.09%    | 0.05%    | 0.06%                        |
|                  | Avg. Savings per Participant (Gross)     | 383      | 295      | 339                          |
|                  | Avg. Savings per Participant (Net)       | 326      | 251      | 288                          |
|                  | Total Gross Deemed Demand                | 0.03     | 0.02     | 0.05                         |
|                  | Realization Rate                         | 100%     | 100%     | 100%                         |
|                  | Realization Rate Adjustment              | 0        | 0.0      | 0.0                          |
|                  | Adjusted Gross Demand                    | 0.03     | 0.02     | 0.05                         |
| Installed        | Net-to-Gross Ratio <sup>74</sup>         | 85%      | 85%      | 85%                          |
| Summer Demand    | Net-to-Gross Adjustment                  | -0.0045  | -0.0030  | -0.0082                      |
| Reduction (kW)   | Net Adjusted Demand                      | 0.0255   | 0.0168   | 0.0465                       |
|                  | Planned Demand (Net)                     | 89.3     | 133.9    | 223.1                        |
|                  | Annual % Toward Planned Demand (Net)     | 0.03%    | 0.01%    | 0.02%                        |
|                  | Avg. Peak Demand per Participant (Gross) | 0.03     | 0.02     | 0.03                         |
|                  | Avg. Demand per Participant (Net)        | 0.03     | 0.02     | 0.02                         |
|                  | Total Gross Deemed Demand                | 02       | 0.0      | 0.2                          |
|                  | Realization Rate                         | 100%     | 100%     | 100%                         |
|                  | Realization Rate Adjustment              | 0        | 0.0      | 0.0                          |
|                  | Adjusted Gross Demand                    | 0.2      | 0.0      | 0.0                          |
| Installed Winter | Net-to-Gross Ratio <sup>74</sup>         | 85%      | 85%      | 85%                          |
| Demand           | Net-to-Gross Adjustment                  | -0.030   | -0.003   | -0.032                       |
| Reduction (kW)   | Net Adjusted Demand                      | 0.000    | 0.000    | 0.032                        |
|                  | Planned Demand (Net)                     | 54.5     | 81.8     | 136.3                        |
|                  | Annual % Toward Planned Demand (Net)     | 0.3%     | 0.0%     | 0.1%                         |
|                  | Avg Peak Demand per Participant (Gross)  | 0.2      | 0.02     | 0.1                          |
|                  | Avg. Demand per Participant (Net)        | 0.2      | 0.02     | 0.09                         |
|                  |                                          |          |          |                              |
|                  | \$Admin. per Participant (Gross)         | \$689    | \$1,549  | \$1,549                      |
| Cumulative       | \$Admin. per kWh/year (Gross)            | \$2      | \$5      | \$5                          |
| Annual Program   | \$Admin. per kW (Gross)                  | \$19,725 | \$56,638 | \$56,638                     |
| renormance       | \$EM&V per Total Costs (\$)              | 9.1%     | 7.0%     | 7.0%                         |
|                  | \$Rebate per Participant (Gross)         | \$25     | \$42     | \$42                         |



#### 2.12.3.3 Additional Virginia program data

Figure 2-54 and Figure 2-55 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-54 shows that 43% of program participants installed smart plugs. Energy Star lamps and the smart home hub were the second most installed measures, adopted by 32% of participants.<sup>75</sup>



Figure 2-54. Virginia Residential Smart Home Program participation by measure and year

<sup>&</sup>lt;sup>75</sup> Note that the participant counts in Figure 2-64 and Figure 2-65 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-35), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-55 shows that smart plugs also produced the highest level of gross annual energy savings (43%). While program participants installed the ENERGY STAR lamps and smart home hub with motion sensor measures as at similar rates as the smart plugs, their contribution to savings do not follow the same patten. Smart thermostats were the second largest contributors of gross annual energy savings, accounting for of 28% of the energy savings.

Figure 2-55. Virginia Residential Smart Home Program gross annual energy savings by measure and year (MWh/year)





#### 2.12.3.4 Additional North Carolina program data

Figure 2-56 and Figure 2-57 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 2-56 shows that 43% of program participants installed smart plugs. Energy Star lamps and the smart home hub were the second most installed measures, adopted by 32% of participants.<sup>76</sup>

Figure 2-56. North Carolina Residential Smart Home Program participation by measure and year



<sup>&</sup>lt;sup>76</sup> Note that the participant counts in Figure 2-56 and Figure 2-58 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-35), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Smart plugs measure accounted for the most gross annual energy savings for the Program in 2023, representing 89% of the total Program energy saved, as Figure 2-57 shows. The chart also shows that despite being installed as frequently as the smart plugs in 2023, the ENERGY STAR LED and smart home hub with motion sensor measures made only small contributions to total Program gross annual energy savings in 2023.



Figure 2-57. North Carolina Residential Smart Home Program gross annual energy savings by measure and year (MWh/year)

0.10 0.20 0.30 0.40 Gross annual energy savings (MWh/year)

0.00

2023



## 2.13 Residential Virtual Energy Audit – Virginia and North Carolina

## 2.13.1 Program description

The Residential Virtual Energy Audit Program offers residential customers in Virginia and North Carolina the opportunity to participate in an online, selfdirected home energy assessment. The energy assessment is completed by the customer, with no trade ally intervention. Customers who complete the self-assessment may receive a no-cost kit containing energy-saving measures. The mix of measures in the kit is based on the customer's responses to the assessment, is compatible with the existing equipment, and optimizes energy savings. Kit measures include low-flow showerheads, aerators, water heater pipe insulation, LED lamp upgrades, door and window weatherstripping, door sweeps, outlet/switch gaskets, and caulking.



The Virginia SCC approved this program as part of the DSM Phase IX programs on September 7, 2021 (Case No. PUR-2020-00274) for five years from January 1, 2022, through December 31, 2026. The North Carolina Utilities Commission approved this program on February 15, 2022 (Docket No. E-22, SUB 614 - 621). Program activity started in the summer of 2022 for Virginia and North Carolina.

## 2.13.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-37 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Table 2-37 | . Residential | Virtual Audits | initial | program | planning | assumptions |
|------------|---------------|----------------|---------|---------|----------|-------------|
|------------|---------------|----------------|---------|---------|----------|-------------|

| Assumption                                                                 | Value                 |
|----------------------------------------------------------------------------|-----------------------|
| Target market                                                              | Residential customers |
| NTG factor                                                                 | 60%                   |
| Measure life (years)                                                       | 17                    |
| Gross average annual savings per participant (kWh/year)                    | 496                   |
| Gross average summer coincident peak demand reduction per participant (kW) | 0.17                  |
| gross average winter coincident peak demand reduction per participant (kW) | 0.11                  |
| Net average annual energy savings per participant (kWh/year)               | 317.4                 |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.10                  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.07                  |
| Average rebate per participant (\$US)                                      | \$51                  |



## 2.13.3 Assessment of program progress toward plan

This section describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.13.3.1 Key Virginia program data

Table 2-38 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category       | Item                                     | 2021    | 2022         | 2023         | Program total<br>(2021–2023) |
|----------------|------------------------------------------|---------|--------------|--------------|------------------------------|
| and the second | Direct Rebate                            |         |              |              |                              |
| Operations     | Direct Implementation                    |         |              |              |                              |
| Management     | Direct EM&V                              |         |              |              |                              |
| Costs (\$)     | Indirect Other<br>(Administrative)       | \$209   | \$27,770     | \$101,128    | \$129,108                    |
|                | Total <sup>78</sup>                      | \$4,465 | \$665,100    | \$1,496,704  | \$2,166,270                  |
| Total Costs    | Planned                                  | \$0     | \$4,205,740  | \$3,338,016  | \$7,543,756                  |
| (\$)           | Variance                                 | \$4,465 | -\$3,540,640 | -\$1,841,311 | -\$5,377,486                 |
|                | Annual % of Planned                      | N/A     | 16%          | 45%          | 29%                          |
|                | Total (Gross)                            | 0       | 2,149        | 8,044        | 10,193                       |
|                | Planned (Gross)                          | 0       | 56,400       | 47,000       | 103,400                      |
| Participants   | Variance                                 | 0       | -54,251      | -38,956      | -93,207                      |
|                | Annual % of Planned<br>(Gross)           | N/A     | 4%           | 17%          | 10%                          |
|                |                                          |         |              |              |                              |
|                | Savings                                  | 0       | 1,972,641    | 5,958,568    | 7,931,209                    |
|                | Realization Rate                         | N/A     | 100%         | 100%         | 100%                         |
|                | Realization Rate<br>Adjustment           | 0       | 0            | 0            | 0                            |
| Installed      | Adjusted Gross Savings                   | 0       | 1,972,641    | 5,958,568    | 7,931,209                    |
| Energy         | Net-to-Gross Ratio                       | N/A     | 60%          | 60%          | 60%                          |
| Savings        | Net-to-Gross Adjustment                  | 0       | -789,056     | -2,383,427   | -3,172,483                   |
| (KVVn/year)    | Net Adjusted Savings                     | 0       | 1,183,584    | 3,575,141    | 4,758,725                    |
|                | Planned Savings (Net)                    | 0       | 16,784,640   | 13,987,200   | 30,771,840                   |
|                | Annual % Toward<br>Planned Savings (Net) | N/A     | 7.05%        | 25.6%        | 15.5%                        |
|                | Avg. Savings per<br>Participant (Gross)  | N/A     | 918          | 741          | 778                          |

#### Table 2-38. Virginia Residential Virtual Audit Program performance indicators (2021–2023)77

77 The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>78</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category    | Item                                       | 2021 | 2022    | 2023    | Program total<br>(2021–2023) |
|-------------|--------------------------------------------|------|---------|---------|------------------------------|
|             | Avg. Savings per<br>Participant (Net)      | N/A  | 551     | 444     | 467                          |
|             | Total Gross Deemed                         | 0    | 163.6   | 574.1   | 737.7                        |
|             | Realization Rate                           | N/A  | 100%    | 100%    | 100%                         |
|             | Realization Rate<br>Adjustment             | 0    | 0       | 0       | 0                            |
|             | Adjusted Gross Demand                      | 0    | 163.6   | 574.1   | 737.7                        |
| Installed   | Net-to-Gross Ratio                         | N/A  | 60%     | 60%     | 60%                          |
| Summer      | Net-to-Gross Adjustment                    | 0    | -65.4   | -229.6  | -295.1                       |
| Reduction   | Net Adjusted Demand                        | 0    | 98.2    | 344.4   | 442.6                        |
| (kW)        | Planned Demand (Net)                       | 0    | 5,752.8 | 4,794.0 | 10,546.8                     |
|             | Annual % Toward<br>Planned Reduction (Net) | N/A  | 1.71%   | 7.18%   | 4.20%                        |
|             | Avg. Demand per<br>Participant (Gross)     | N/A  | 0.08    | 0.07    | 0.07                         |
|             | Avg. Demand per<br>Participant (Net)       | N/A  | 0.05    | 0.04    | 0.04                         |
|             |                                            |      |         |         |                              |
|             | Total Gross Deemed<br>Demand               | 0.0  | 269.3   | 942.2   | 1,211.5                      |
|             | Realization Rate                           | N/A  | 100%    | 100%    | 100%                         |
|             | Realization Rate<br>Adjustment             | 0    | 0       | 0       | 0                            |
|             | Adjusted Gross Demand                      | 0    | 269.3   | 942.2   | 1,211.5                      |
| Installed   | Net-to-Gross Ratio                         | N/A  | 60%     | 60%     | 60%                          |
| Demand      | Net-to-Gross Adjustment                    | 0    | -107.7  | -376.9  | -484.6                       |
| Reduction   | Net Adjusted Demand                        | 0    | 161.6   | 565.3   | 726.9                        |
| (kW)        | Planned Demand (Net)                       | 0    | 3,722.4 | 3,102.0 | 6,824.4                      |
|             | Annual % Toward<br>Planned Reduction (Net) | N/A  | 4.34%   | 18.2%   | 10.7%                        |
|             | Avg. Demand per<br>Participant (Gross)     | N/A  | 0.1     | 0.1     | 0.1                          |
|             | Avg. Demand per<br>Participant (Net)       | N/A  | 0.08    | 0.07    | 0.07                         |
|             |                                            |      |         |         |                              |
|             | \$Admin. per Participant<br>(Gross)        | N/A  | \$13    | \$13    | \$13                         |
| Cumulative  | \$Admin. per kWh/year<br>(Gross)           | N/A  | \$0.01  | \$0.02  | \$0.02                       |
| Program     | \$Admin. per kW (Gross)                    | N/A  | \$171   | \$175   | \$175                        |
| Performance | \$EM&V per Total Costs<br>(\$)             | 0.0% | 7.2%    | 7.5%    | 7.5%                         |
|             | \$Rebate per Participant<br>(Gross)        | N/A  | \$119   | \$115   | \$115                        |



#### 2.13.3.2 Key North Carolina program data

Table 2-39 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L..

| Category                                   | Item                                  | 2022      | 2023       | Program total<br>(2022–2023) |
|--------------------------------------------|---------------------------------------|-----------|------------|------------------------------|
| 1                                          | Direct Rebate                         |           |            |                              |
| Operations and<br>Management<br>Costs (\$) | Direct Implementation                 |           |            |                              |
|                                            | Direct EM&V                           |           |            |                              |
|                                            | Indirect Other (Administrative)       | \$647     | \$5,778    | \$6,425                      |
|                                            | Total <sup>80</sup>                   | \$15,492  | \$85.520   | \$101.012                    |
|                                            | Planned                               | \$107.801 | \$205,063  | \$312.864                    |
| Total Costs (\$)                           | Variance                              | -\$92,308 | -\$119,543 | -\$211,851                   |
|                                            | Annual % of Planned                   | 14%       | 42%        | 32%                          |
|                                            | Total (Gross)                         | 39        | 377        | 416                          |
| 2                                          | Planned (Gross)                       | 3,600     | 3,000      | 6,600                        |
| Participants                               | Variance                              | -3,561    | -2,623     | -6,184                       |
|                                            | Annual % of Planned (Gross)           | 1%        | 13%        | 6%                           |
|                                            | Total Gross Deemed Savings            | 40,749    | 355,820    | 396,569                      |
|                                            | Realization Rate                      | 100%      | 100%       | 100%                         |
|                                            | Realization Rate Adjustment           | 0         | 0          | 0                            |
|                                            | Adjusted Gross Savings                | 40,749    | 355,820    | 396,569                      |
| Installed                                  | Net-to-Gross Ratio                    | 60%       | 60%        | 60%                          |
| Energy Savings                             | Net-to-Gross Adjustment               | -16,300   | -142,328   | -158,628                     |
| (kWh/year)                                 | Net Adjusted Savings                  | 24,450    | 213,492    | 237,941                      |
|                                            | Planned Savings (Net)                 | 1,071,360 | 892,800    | 1,964,160                    |
|                                            | Annual % Toward Planned Savings (Net) | 2.28%     | 23.9%      | 12.1%                        |
|                                            | Avg. Savings per Participant (Gross)  | 1,045     | 944        | 953                          |
|                                            | Avg. Savings per Participant (Net)    | 627       | 566        | 572                          |
| and a second                               | Total Gross Deemed Demand             | 3.5       | 33 7       | 37.2                         |
| Installed                                  | Realization Rate                      | 100%      | 100%       | 100%                         |
| Demand                                     | Realization Rate Adjustment           | 0         | 0          | 0                            |
| Reduction (kW)                             | Adjusted Gross Demand                 | 3.5       | 33.7       | 37.2                         |

| Table 0.20 Month Canalina  | Decidential Vintual | Audit Deservers |            | Indiantana | 10000 0000179 |
|----------------------------|---------------------|-----------------|------------|------------|---------------|
| Table 2-39. North Carolina | Residential virtual | Augit Program   | benormance | indicators | 2022-20231    |

<sup>&</sup>lt;sup>79</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>80</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                                       | Item                                    | 2022   | 2023   | Program total<br>(2022–2023) |
|------------------------------------------------|-----------------------------------------|--------|--------|------------------------------|
|                                                | Net-to-Gross Ratio                      | 60%    | 60%    | 60%                          |
|                                                | Net-to-Gross Adjustment                 | -1.4   | -13.5  | -14.9                        |
|                                                | Net Adjusted Demand                     | 2.1    | 20.2   | 22.3                         |
|                                                | Planned Demand (Net)                    | 367.2  | 306.0  | 673.2                        |
|                                                | Annual % Toward Planned Reduction (Net) | 0.57%  | 6.61%  | 3.31%                        |
|                                                | Avg. Demand per Participant (Gross)     | 0.09   | 0.09   | 0.09                         |
|                                                | Avg. Demand per Participant (Net)       | 0.05   | 0.05   | 0.05                         |
| Installed Winter<br>Demand<br>Reduction (kW)   | Total Gross Deemed Demand               | 5.6    | 52.2   | 57.8                         |
|                                                | Realization Rate                        | 100%   | 100%   | 100%                         |
|                                                | Realization Rate Adjustment             | 0      | 0      | 0                            |
|                                                | Adjusted Gross Demand                   | 5.6    | 52.2   | 57.8                         |
|                                                | Net-to-Gross Ratio                      | 60%    | 60%    | 60%                          |
|                                                | Net-to-Gross Adjustment                 | -2.2   | -20.9  | -23.1                        |
|                                                | Net Adjusted Demand                     | 3.4    | 31.3   | 34.7                         |
|                                                | Planned Demand (Net)                    | 237.6  | 198.0  | 435.6                        |
|                                                | Annual % Toward Planned Reduction (Net) | 1.41%  | 15.8%  | 7.96%                        |
|                                                | Avg. Demand per Participant (Gross)     | 0.1    | 0.1    | 0.1                          |
|                                                | Avg. Demand per Participant (Net)       | 0.09   | 0.08   | 0.08                         |
| Cumulative<br>Annual<br>Program<br>Performance | \$Admin. per Participant (Gross)        | \$17   | \$15   | \$15                         |
|                                                | \$Admin. per kWh/year (Gross)           | \$0.02 | \$0.02 | \$0.02                       |
|                                                | \$Admin. per kW (Gross)                 | \$185  | \$173  | \$173                        |
|                                                | \$EM&V per Total Costs (\$)             | 11.0%  | 8.4%   | 8.4%                         |
|                                                | \$Rebate per Participant (Gross)        | \$127  | \$129  | \$129                        |


#### 2.13.3.3 Additional Virginia program data

Figure 2-58 and Figure 2-59 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

There were 8,044 participants in 2023. Smart strips were the most popular, followed by lighting, water distribution, hot water pipe insulation, and weatherization measures.<sup>81</sup>

Figure 2-58. Virginia Residential Virtual Audit Program participation by measure and year



<sup>&</sup>lt;sup>81</sup> Note that the participant counts in Figure 2-58 and Figure 2-59 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-38), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The majority of the program's gross annual energy savings can be attributed to the four most popular measures that participants received -- water distribution, followed by lighting, hot water pipe insulation and smart strips.

Figure 2-59. Virginia Residential Virtual Audit Program gross annual energy savings (MWh/year) by measure and year





Figure 2-60 and Figure 2-61 show participation and gross annual energy savings by building type and year. In 2023, like in 2022, single-family detached homes had the most participants and gross annual energy savings.







Figure 2-61. Virginia Residential Virtual Audit Program gross annual energy savings (MWh/year) by building type and year





## 2.13.3.4 Additional North Carolina program data

Figure 2-62 and Figure 2-63 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.<sup>82</sup> 377 customers participated in North Carolina's program. After smart strips, the most popular measures were lighting, water distribution and hot water pipe insulation, and window weatherstripping.



Figure 2-62. North Carolina Virtual Audit Program participation by measure and year

<sup>&</sup>lt;sup>82</sup> Note that the participant counts in Figure 2-62 and Figure 2-63 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-39), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The majority of the program's gross annual energy savings are attributed to water distribution, followed by lighting, hot water pipe insulation, and smart strips. The remainder of installed measures had relatively lower annual energy savings.

Figure 2-63. North Carolina Residential Virtual Audit Program gross annual energy savings (MWh/year) by measure and year





Figure 2-64 and Figure 2-65 show participation and gross annual energy savings by building type and year. In 2023, like in 2022, single-family detached homes had the most participants and gross annual energy savings.







Figure 2-65. North Carolina Residential Virtual Audit Program gross annual energy savings (MWh/year) by building type and year





## 2.14 Residential Water Savings – Virginia and North Carolina

## 2.14.1 Program description

The Residential Water Energy Savings Program provides owners and occupants of single-family homes and townhomes rebates for the purchase of ENERGY STAR rated pool pumps and heat pump water heaters. Residential customers living in single-family residences or townhomes with existing heat pump electric heating and cooling are eligible for this program. To receive the rebate the rebate application must be submitted within 45 days of the equipment installation. The eligible equipment includes:

- Variable speed pool pump
- Domestic Heat pump water heater

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The Virginia SCC approved this DSM Phase IX program on September 7, 2021 (Case No. PUR-2020-00274) for a five-year period from January 1, 2022, through December 31, 2026.15F83 The North Carolina Utilities Commission approved this program on March 18, 2022 (Docket No. E-22, SUB 620).<sup>84</sup>

## 2.14.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-40 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of rebated heat pump water heaters and pool pumps.

#### Table 2-40. Residential Water Saving Program planning assumptions

| Assumption                                                          | Description           |
|---------------------------------------------------------------------|-----------------------|
| Target market                                                       | Residential customers |
| NTG factor                                                          | 90%                   |
| Measure life (years)                                                | 11.60                 |
| Gross average annual energy savings (kWh/year) per participant      | 2,187                 |
| Gross average coincident peak demand reduction (kW) per participant | 1                     |
| Net average annual energy savings (kWh/year) per participant        | 1,968                 |
| Net average coincident peak demand reduction (kW) per participant   | 1                     |
| Average rebate (\$US) per participant                               | \$356                 |

## 2.14.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

## 2.14.3.1 Key Virginia program data

Table 2-41 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a

<sup>83</sup> Virginia Residential Water Saving Program Terms and Conditions.

<sup>84</sup> North Carolina Residential Water Saving Program Terms and Conditions.



comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category          | Item                                  | 2021     | 2022       | 2023        | Program total<br>(2021–2023) |
|-------------------|---------------------------------------|----------|------------|-------------|------------------------------|
| Operations        | Direct Rebate                         |          |            |             |                              |
| and               | Direct Implementation                 |          |            |             |                              |
| Management        | Direct EM&V                           |          |            |             |                              |
| Costs (\$)        | Indirect Other (Administrative)       | \$478    | \$10,722   | \$23,472    | \$34,672                     |
|                   | Total <sup>86</sup>                   | \$10,197 | \$256,790  | \$347,383   | \$614,369                    |
| Total Costs       | Planned                               | \$0      | \$794,394  | \$1,088,146 | \$1,882,541                  |
| (\$)              | Variance                              | \$10,197 | -\$537,605 | -\$740,763  | -\$1,268,171                 |
|                   | Annual % of Planned                   | N/A      | 32%        | 32%         | 33%                          |
|                   | Total (Gross)                         | 0        | 62         | 368         | 430                          |
|                   | Planned (Gross)                       | 0        | 940        | 1,880       | 2,820                        |
| Participants      | Variance                              | 0        | -878       | -1,512      | -2,390                       |
|                   | Annual % of Planned (Gross)           | N/A      | 7%         | 20%         | 15%                          |
|                   | Total Gross Deemed Savings            | 0        | 97,694     | 513.620     | 611,314                      |
|                   | Realization Rate                      | N/A      | 100%       | 100%        | 100%                         |
|                   | Realization Rate Adjustment           | 0        | 0          | 0           | 0                            |
|                   | Adjusted Gross Savings                | 0        | 97,694     | 513,620     | 611,314                      |
| Installed         | Net-to-Gross Ratio87                  | N/A      | 90%        | 90%         | 90%                          |
| Energy            | Net-to-Gross Adjustment               | 0        | -9,769     | -51,362     | -61,131                      |
| (kWh/year)        | Net Adjusted Savings                  | 0        | 87,925     | 462,258     | 550,183                      |
|                   | Planned Savings (Net)                 | 0        | 1,850,202  | 3,700,404   | 5,550,606                    |
|                   | Annual % Toward Planned Savings (Net) | N/A      | 4.8%       | 12.5%       | 9.9%                         |
|                   | Avg. Savings per Participant (Gross)  | N/A      | 1,576      | 1,396       | 1,422                        |
|                   | Avg. Savings per Participant (Net)    | N/A      | 1,418      | 1,256       | 1,279                        |
| Installed         | Total Gross Deemed Demand             | 0        | 12         | 80          | 101                          |
| Summer            | Realization Rate                      | NIA      | 100%       | 100%        | 100%                         |
| Demand            | Realization Rate Adjustment           |          | 0          | 10070       | 100%                         |
| Reduction<br>(kW) | Adjusted Gross Demand                 | 0        | 12         | 89          | 101                          |

|           |    |           |             |       |         |          | • • • • • • • • • • • • • • • • • • • | G          |            | 05     |
|-----------|----|-----------|-------------|-------|---------|----------|---------------------------------------|------------|------------|--------|
| Table 2.  | 41 | Virginia  | Residential | Water | Savings | Program  | nerformance                           | indicators | (2021 - 2) | 023180 |
| I GINIC L | -  | The grind | 1 Coldentiu |       | outings | 1 Togram | periorinanoe                          | maioutors  |            |        |

<sup>&</sup>lt;sup>85</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>86</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>87</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 84% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category    | Item                                        | 2021  | 2022  | 2023   | Program total<br>(2021–2023) |
|-------------|---------------------------------------------|-------|-------|--------|------------------------------|
|             | Net-to-Gross Ratio <sup>87</sup>            | N/A   | 90%   | 90%    | 90%                          |
|             | Net-to-Gross Adjustment                     | 0     | -1.2  | -8.9   | -10.1                        |
|             | Net Adjusted Demand                         | 0     | 11    | 80     | 91                           |
|             | Planned Demand (Net)                        | 0     | 441   | 881    | 1,322                        |
|             | Annual % Toward Planned Demand (Net)        | N/A   | 2.5%  | 9.0%   | 6.9%                         |
| 1.11        | Avg. Peak Demand per Participant<br>(Gross) | N/A   | 0.20  | 0.20   | 0.20                         |
|             | Avg. Demand per Participant (Net)           | N/A   | 0.20  | 0.20   | 0.20                         |
|             |                                             |       |       |        |                              |
|             | Total Gross Deemed Demand                   | 0     | 16    | 103    | 118                          |
|             | Realization Rate                            | N/A   | 100%  | 100%   | 100%                         |
|             | Realization Rate Adjustment                 | 0     | 0     | 0      | 0                            |
|             | Adjusted Gross Demand                       | 0     | 16    | 103    | 118                          |
| Installed   | Net-to-Gross Ratio <sup>87</sup>            | N/A   | 90%   | 90%    | 90%                          |
| Demand      | Net-to-Gross Adjustment                     | 0     | -1.60 | -10.30 | -11.80                       |
| Reduction   | Net Adjusted Demand                         | 0     | 14    | 92     | 107                          |
| (kW)        | Planned Demand (Net)                        | 0     | 0     | 0      | 0                            |
|             | Annual % Toward Planned Demand (Net)        | N/A   | N/A   | N/A    | N/A                          |
|             | Avg. Peak Demand per Participant<br>(Gross) | N/A   | 0.30  | 0.30   | 0.30                         |
|             | Avg. Demand per Participant (Net)           | N/A   | 0.20  | 0.30   | 0.20                         |
|             |                                             |       |       |        |                              |
|             | \$Admin. per Participant (Gross)            | N/A   | \$181 | \$81   | \$81                         |
| Cumulative  | \$Admin. per kWh/year (Gross)               | N/A   | \$0   | \$0.06 | \$0.06                       |
| Program     | \$Admin. per kW (Gross)                     | N/A   | \$914 | \$344  | \$344                        |
| Performance | \$EM&V per Total Costs (\$)                 | 45.6% | 8.4%  | 9.0%   | 9.0%                         |
|             | \$Rebate per Participant (Gross)            | N/A   | \$307 | \$311  | \$311                        |

## 2.14.3.2 Key North Carolina program data

Table 2-42 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-42. North Carolina Residential Water Savings Program performance indicators (2022-2023)85

| Category         | Item                            | 2022    | 2023     | Program total<br>(2022–2023) |
|------------------|---------------------------------|---------|----------|------------------------------|
|                  | Direct Rebate                   |         |          |                              |
| Operations and   | Direct Implementation           |         |          |                              |
| Costs (\$)       | Direct EM&V                     |         |          |                              |
|                  | Indirect Other (Administrative) | \$211   | \$1,114  | \$1,324                      |
| Total Costs (\$) | Total <sup>86</sup>             | \$5,048 | \$16,481 | \$21,529                     |



| Category              | Item                                        | 2022      | 2023      | Program total<br>(2022–2023) |
|-----------------------|---------------------------------------------|-----------|-----------|------------------------------|
|                       | Planned                                     | \$20,362  | \$66,848  | \$87,209                     |
|                       | Variance                                    | -\$15,314 | -\$50,367 | -\$65,681                    |
|                       | Annual % of Planned                         | 25%       | 25%       | 25%                          |
| <u>.</u>              | Total (Gross)                               | 0         | 11        | 11                           |
|                       | Planned (Gross)                             | 60        | 120       | 180                          |
| Participants          | Variance                                    | -60       | -109      | -169                         |
|                       | Annual % of Planned (Gross)                 | 0%        | 9%        | 6%                           |
|                       | Total Gross Deemed Savings                  | 0         | 14,129    | 14.129                       |
|                       | Realization Rate                            | N/A       | 100%      | 100%                         |
|                       | Realization Rate Adjustment                 | 0         | 0         | 0                            |
|                       | Adjusted Gross Savings                      | 0         | 14,129    | 14.129                       |
|                       | Net-to-Gross Ratio <sup>87</sup>            | N/A       | 90%       | 90%                          |
| Installed Energy      | Net-to-Gross Adjustment                     | 0         | -1,413    | -1,413                       |
| Savings<br>(kWb/year) | Net Adjusted Savings                        | 0         | 12,716    | 12,716                       |
| (KWIII) year)         | Planned Savings (Net)                       | 118,098   | 236,196   | 354,294                      |
|                       | Annual % Toward Planned Savings<br>(Net)    | 0%        | 5.4%      | 3.6%                         |
|                       | Avg. Savings per Participant (Gross)        | N/A       | 1,284     | 1,284                        |
|                       | Avg. Savings per Participant (Net)          | N/A       | 1,156     | 1,156                        |
|                       | Total Gross Deemed Demand                   | 0         | 2.70      | 2.70                         |
|                       | Realization Rate                            | N/A       | 100%      | 100%                         |
|                       | Realization Rate Adjustment                 | 0         | 0         | 0                            |
|                       | Adjusted Gross Demand                       | 0         | 2.7       | 2.7                          |
|                       | Net-to-Gross Ratio <sup>87</sup>            | N/A       | 90%       | 90%                          |
| Installed             | Net-to-Gross Adjustment                     | 0         | -0.30     | -0.30                        |
| Demand                | Net Adjusted Demand                         | 0         | 2.50      | 2.50                         |
| Reduction (kW)        | Planned Demand (Net)                        | 28.1      | 56.20     | 84.40                        |
|                       | Annual % Toward Planned Demand (Net)        | 0%        | 4.4%      | 3.0%                         |
|                       | Avg. Peak Demand per Participant<br>(Gross) | N/A       | 0.20      | 0.20                         |
|                       | Avg. Demand per Participant (Net)           | N/A       | 0.20      | 0.20                         |
|                       | Tatal Organ Deemed Demond                   |           | 0.40      | 0.40                         |
| and the second second | Provide Gross Deemed Demand                 | 0         | 3.10      | 3.10                         |
| Installed Winter      |                                             | N/A       | 100%      | 100%                         |
| Reduction (kW)        | Realization Rate Adjustment                 | 0         | 0         | 0                            |
|                       | Adjusted Gross Demand                       | 0         | 3.10      | 3.10                         |
|                       | Net-to-Gross Ratio"                         | N/A       | 90%       | 90%                          |



| Category    | Item                                        | 2022  | 2023   | Program total<br>(2022–2023) |
|-------------|---------------------------------------------|-------|--------|------------------------------|
|             | Net-to-Gross Adjustment                     | 0     | -0.30  | -0.30                        |
|             | Net Adjusted Demand                         | 0     | 2.80   | 2.80                         |
|             | Planned Demand (Net)                        | 0     | 0      | 0                            |
|             | Annual % Toward Planned Demand (Net)        | N/A   | N/A    | N/A                          |
|             | Avg. Peak Demand per Participant<br>(Gross) | N/A   | 0.30   | 0.30                         |
|             | Avg. Demand per Participant (Net)           | N/A   | 0.30   | 0.30                         |
| Cumulativa  | \$Admin. per Participant (Gross)            | N/A   | \$120  | \$120                        |
| Annual      | \$Admin. per kWh/year (Gross)               | N/A   | \$0.09 | \$0.09                       |
| Program     | \$Admin. per kW (Gross)                     | N/A   | \$485  | \$485                        |
| Performance | \$EM&V per Total Costs (\$)                 | 10.1% | 11.4%  | 11.4%                        |
|             | \$Rebate per Participant (Gross)            | N/A   | \$295  | \$295                        |



## 2.14.3.3 Additional Virginia program data

Figure 2-66 and Figure 2-67 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 2-66 shows that a total of 368 heat pump water heaters and pool pumps were installed in 2023. The most frequently installed measure was variable speed pool pump, which 51% of the 2023 measures. There were 180 heat pump water heaters accounting for 49% of measures installed in 2023.



Figure 2-66. Virginia Residential Water Savings Program participation by measure and year



The pool pump measure accounted for a slightly higher portion of the gross annual energy savings in 2023, representing 56% of the total program energy saved, as shown in Figure 2-67.

Figure 2-67. Virginia Residential Water Savings Program gross annual energy savings (MWh/year) by measure and year





Figure 2-68 and Figure 2-69 show participation and gross annual energy savings by building type and year. As shown in Figure 2-68, the pool pumps and heat pump water heaters were installed primarily in single-family detached homes (93%) and other single-family homes (7%).



Figure 2-68. Virginia Residential Water Savings Program participation by building type and year



The majority of the 2023 gross annual energy savings were primarily from the installation of pool pumps and heat pump water heaters in single-family detached homes (93% of the total energy saved), as shown in Figure 2-69.

Figure 2-69. Virginia Residential Water Savings Program gross annual energy savings (MWh/year) by building type and year





## 2.14.3.4 Additional North Carolina program data

Figure 2-70 and Figure 2-71 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Slightly over half of the measures that were installed were pool pumps (64%), representing over half (53%) of the gross annual energy savings. The remaining measures (36%) and gross annual energy savings (47%) were from heat pump water heaters. All of the pool pumps and heat pump water heaters were installed in single-family detached homes.

Figure 2-70. North Carolina Residential Water Savings Program participation by measure and year





Figure 2-71. North Carolina Residential Water Savings Program gross annual energy savings (MWh/year) by measure and year





#### **ENERGY EFFICIENCY – INCOME AND AGE QUALIFYING** 3

#### 3.1 **Residential HVAC Health and Safety Program – Virginia**

#### 3.1.1 Program description

The Residential Heating Ventilation and Air Conditioning (HVAC) Health and Safety Program provides direct-install energy efficiency improvements to eligible age- and income-qualifying homeowners to reduce heating and cooling costs and to enhance the health and safety of residents in Dominion Energy's service territory. To qualify for the program in the Virginia service territory, a customer must meet the following eligibility requirements. Customer must be a current Dominion Energy or a new service customer and either:

Customer has a household income that does not exceed 60% of the Virginia Median Income, or 80% of the Area



- Median Income, whichever is greater; or
- Customer is 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income. . Both owner-occupied and renter-occupied households are eligible to participate, however, renter-occupied households are only eligible for the program if they have permission from the homeowner for improvements to be installed. To participate in the program, Dominion Energy customers can contact Dominion Energy-approved weatherization service providers. Table 3-1 shows the energy-saving products that the program may include:

| End use           | Measure                                         |  |  |  |
|-------------------|-------------------------------------------------|--|--|--|
|                   | Heat pump replacement                           |  |  |  |
|                   | HVAC/home ventilation improvements              |  |  |  |
|                   | Electric baseboard heat upgrade/changeout       |  |  |  |
| HVAC              | Upgrades to mini-split/ductless heat pumps      |  |  |  |
|                   | Thermostat replacement                          |  |  |  |
|                   | HVAC tune-up                                    |  |  |  |
|                   | Duct sealing/insulation/repair/replacement      |  |  |  |
| Building Envelope | Insulation repair or upgrade wall and floor     |  |  |  |
| Building Envelope | Comprehensive air sealing                       |  |  |  |
|                   | Mold/mildew removal                             |  |  |  |
|                   | Re-wiring                                       |  |  |  |
|                   | Air quality control                             |  |  |  |
|                   | Carbon monoxide detectors and sources           |  |  |  |
| Health and Safety | Assessments of indoor air quality               |  |  |  |
|                   | Combustion appliance safety checks/enhancements |  |  |  |
|                   | Fire and fall safety checks/enhancements        |  |  |  |
|                   | Roof repairs                                    |  |  |  |
|                   | Dehumidifiers                                   |  |  |  |

| Table 2.1  | Enoral cavina  | producte fo | r Docidontial | Hoalth and | Cafaty | Drogram |
|------------|----------------|-------------|---------------|------------|--------|---------|
| lavie J-1. | Lifergy-saving | products 10 | Residentia    | nealth anu | Salety | Flogram |



The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched on February 1, 2021.<sup>88</sup> This program is the first of two components resulting from the passage of Virginia House Bill 2789.<sup>89</sup> The first component offers incentives for Heating and Cooling/Health and Safety measures, and the second component offers incentives for the installation of solar equipment. Participants in the first program component are eligible to participate in the second component. Details about the second component, Residential HB2789 Solar, appear in Section 3.2.

# 3.1.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 3-2 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until savings are verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Assumption                                                                    | Value (Residential)                                 | Value (Non-Residential)                                 |
|-------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| Target market                                                                 | Income- and age-qualifying<br>residential customers | Income- and age-qualifying<br>non-residential customers |
| NTG factor                                                                    | 80%                                                 | 80%                                                     |
| Measure life (years)                                                          | 16                                                  | 16                                                      |
| Gross average annual savings per participant (kWh/year)                       | 825                                                 | 3,978.75                                                |
| Gross average summer coincident peak demand reduction per participant (kW)    | 0.973                                               | 2.06                                                    |
| Gross average winter coincident peak demand<br>reduction per participant (kW) | 0.35                                                | 1.45                                                    |
| Net average annual energy savings per participant (kWh/year)                  | 664                                                 | 3,183                                                   |
| Net average summer coincident peak demand reduction (kW) per participant      | 0.78                                                | 1.65                                                    |
| Net average winter coincident peak demand reduction (kW) per participant      | 0.28                                                | 1.16                                                    |
| Average rebate per participant (\$US)                                         | \$933                                               | \$14,585                                                |

#### Table 3-2. Residential HVAC Health and Safety Program planning assumptions

## 3.1.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

## 3.1.3.1 Key Virginia program data

Table 3-3 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance

<sup>88</sup> HVAC Health and Safety Program Terms and Conditions

<sup>&</sup>lt;sup>89</sup> Virginia Acts of Assembly–2019 Session. Chapter 748. Approved Mar 21, 2019. Or Hour Bill 2789.



indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category               | Item                                     | 2021         | 2022         | 2023         | Program total<br>(2020–2023) |
|------------------------|------------------------------------------|--------------|--------------|--------------|------------------------------|
| an a transformer to an | Direct Rebate                            |              |              |              |                              |
| Operations and         | Direct Implementation                    |              |              |              |                              |
| Costs (\$)             | Direct EM&V                              |              |              |              |                              |
| 00010 (4)              | Indirect Other (Administrative)          | \$426,441    | \$509,068    | \$654,235    | \$1,591,865                  |
|                        | Total <sup>91</sup>                      | \$9,094,648  | \$12,192,181 | \$9,682,714  | \$31,019,265                 |
| Total Costs (\$)       | Planned                                  | \$10,821,869 | \$10,948,523 | \$10,850,431 | \$32,620,823                 |
| Total Costs (\$)       | Variance                                 | -\$1,727,220 | \$1,243,658  | -\$1,167,717 | -\$1,601,557                 |
|                        | Annual % of Planned                      | 84%          | 111%         | 89%          | 95%                          |
|                        | Total (Gross)                            | 3,361        | 3,661        | 3,693        | 10,715                       |
| 0.013.000              | Planned (Gross)                          | 8,791        | 8,791        | 8,791        | 26,373                       |
| Participants           | Variance                                 | -5,430       | -5,130       | -5,098       | -15,658                      |
|                        | Annual % of Planned (Gross)              | 38%          | 42%          | 42%          | 41%                          |
|                        | Total Gross Deemed Savings               | 1,341,418    | 999,178      | 796,194      | 3,136,790                    |
|                        | Realization Rate                         | 100%         | 100%         | 100%         | 100%                         |
|                        | Realization Rate Adjustment              | 0            | 0            | 0            | 0                            |
|                        | Adjusted Gross Savings                   | 1,341,418    | 999,178      | 796,194      | 3,136,790                    |
|                        | Net-to-Gross Ratio                       | 80%          | 80%          | 80%          | 80%                          |
| Installed Energy       | Net-to-Gross Adjustment                  | -268,284     | -199,836     | -159,239     | -627,358                     |
| Savings                | Net Adjusted Savings                     | 1,073,134    | 799,342      | 636,955      | 2,509,432                    |
| (kWh/year)             | Planned Savings (Net)                    | 5,802,060    | 5,802,060    | 5,802,060    | 17,406,180                   |
|                        | Annual % Toward Planned<br>Savings (Net) | 19%          | 14%          | 11%          | 14%                          |
|                        | Avg. Savings per Participant<br>(Gross)  | 399          | 273          | 216          | 293                          |
|                        | Avg. Savings per Participant<br>(Net)    | 319          | 218          | 172          | 234                          |
|                        |                                          |              |              |              |                              |
| Installed              | Total Gross Deemed Demand                | 200          | 194          | 141          | 535                          |
| Summer                 | Realization Rate                         | 100%         | 100%         | 100%         | 100%                         |
| Demand                 | Realization Rate Adjustment              | 0            | 0            | 0            | 0                            |
| Reduction (KVV)        | Adjusted Gross Demand                    | 200          | 194          | 141          | 535                          |

| Table 3-3. Virginia Residential HVAC Health and Safety indicators (2020- |
|--------------------------------------------------------------------------|
|--------------------------------------------------------------------------|

<sup>&</sup>lt;sup>90</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>91</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The reported expenditures do not include Dominion Energy's margins.



| Category         | Item                                       | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|------------------|--------------------------------------------|---------|---------|---------|------------------------------|
|                  | Net-to-Gross Ratio                         | 80%     | 80%     | 80%     | 80%                          |
|                  | Net-to-Gross Adjustment                    | -40     | -39     | -28     | -107                         |
|                  | Net Adjusted Demand                        | 160     | 155     | 113     | 428                          |
|                  | Planned Demand (Net)                       | 6,841   | 6,842   | 6,842   | 20,525                       |
|                  | Annual % Toward Planned<br>Reduction (Net) | 2.34%   | 2.27%   | 1.65%   | 2.09%                        |
|                  | Avg. Demand per Participant<br>(Gross)     | 0.06    | 0.05    | 0.04    | 0.05                         |
|                  | Avg. Demand per Participant<br>(Net)       | 0.05    | 0.04    | 0.03    | 0.04                         |
|                  |                                            |         |         |         |                              |
|                  | Total Gross Deemed Demand                  | 295     | 296     | 247     | 838                          |
|                  | Realization Rate                           | 100%    | 100%    | 100%    | 100%                         |
|                  | Realization Rate Adjustment                | 0       | 0       | 0       | 0                            |
|                  | Adjusted Gross Demand                      | 295     | 296     | 247     | 838                          |
|                  | Net-to-Gross Ratio                         | 80%     | 80%     | 80%     | 80%                          |
| Installed Winter | Net-to-Gross Adjustment                    | -59     | -59     | -49     | -168                         |
| Demand           | Net Adjusted Demand                        | 236     | 237     | 197     | 670                          |
| Reduction (kW)   | Planned Demand (Net)                       | 2,474   | 2,473   | 2,474   | 7,421                        |
|                  | Annual % Toward Planned<br>Reduction (Net) | 9.5%    | 9.6%    | 7.8%    | 9.0%                         |
|                  | Avg. Demand per Participant<br>(Gross)     | 0.09    | 0.08    | 0.07    | 0.08                         |
|                  | Avg. Demand per Participant<br>(Net)       | 0.07    | 0.06    | 0.05    | 0.06                         |
|                  |                                            |         |         |         |                              |
|                  | \$Admin. per Participant<br>(Gross)        | \$128   | \$134   | \$149   | \$149                        |
| Annual           | \$Admin. per kWh/year (Gross)              | \$0     | \$0     | \$1     | \$1                          |
| Program          | \$Admin. per kW (Gross)                    | \$2,141 | \$2,378 | \$2,974 | \$2,974                      |
| Performance      | \$EM&V per Total Costs (\$)                | 2.3%    | 1.7%    | 1.6%    | 1.6%                         |
| r enormance      | \$Rebate per Participant<br>(Gross)        | \$2,141 | \$2,433 | \$2,301 | \$2,301                      |



#### 3.1.3.2 Additional Virginia program data

Figure 3-1 and Figure 3-2 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Heat pump upgrades produced the highest savings (343 MWh/year), followed by the thermostat replacements (298 MWh/year). Thermostat replacements were also the most frequently installed measure. These two measures made up 80% of the gross energy savings for 2023. The most frequently installed health and safety measures were fire and fall safety checks/enhancements, air quality control, and re-wiring however health and safety measures are credited with savings.<sup>111</sup>



Figure 3-1. Virginia Residential HVAC Health and Safety Program participation by measure and year

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<sup>&</sup>lt;sup>111</sup> Note that the participant counts in Figure 3-1 and Figure 3-2 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 3-3), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results





Figure 3-2. Virginia Residential HVAC Health and Safety Program gross annual energy savings (MWh/year) by measure and year



Figure 3-3 and Figure 3-4 show participation and gross annual energy savings by building type and year. Like last year, most participants and savings were produced in multi-family buildings.



Figure 3-3. Virginia Residential HVAC Health and Safety Program participation by building type and year



Figure 3-4. Virginia Residential HVAC Health and Safety Program gross annual energy savings (MWh/year) by building type and year





# 3.2 Income and Age Qualifying Solar Program – Virginia

## 3.2.1 Program description

The Residential Income and Age Qualifying (IAQ) Solar Program offers incentives for the installation of solar photovoltaic (PV) systems to eligible age- and income-qualifying homeowners in Dominion Energy's service territory. To qualify for the program in the Company's Virginia service territory, customers must meet the following eligibility requirements:

- Participants must have engaged in at least one other IAQ program and meet one of the following criteria:
  - Have a total household income that



- does not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income, whichever is greater
- Be 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income.
- Must have previously participated in one of the IAQ programs offered by Dominion Energy

Eligible customers must reside in single-family residences, town homes, or mobile homes placed on a permanent foundation. Owner-occupied and renter-occupied households are eligible to participate in the program. However, renter-occupied households must be responsible for the electric bill and be able to secure permission from the owner to install the solar PV system. Multifamily facilities owned by local housing authorities are ineligible for the program.

The Virginia SCC approved this program, as part of the DSM Phase IX programs, on September 7, 2021, (PUR-2020-00274) for a five-year period of January 1, 2022, through December 31, 2026.<sup>112</sup> The official program start date was August 1, 2022, in Virginia. In 2023, the program's marketing and outreach was enhanced with a new brochure and leave-behind materials.

# 3.2.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 3-4 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Assumption                                              | Value (Residential)                                 |
|---------------------------------------------------------|-----------------------------------------------------|
| Target market                                           | Income- and age-qualifying<br>residential customers |
| NTG factor                                              | 80%                                                 |
| Measure life (years)                                    | 20.0                                                |
| Gross average annual savings (kWh/year) per participant | 4,590                                               |

#### Table 3-4. IAQ Solar Program planning assumptions

<sup>112</sup> Income and Age Qualifying Solar Program Terms and Conditions



| Assumption                                                                 | Value (Residential) |
|----------------------------------------------------------------------------|---------------------|
| Gross average summer coincident peak demand reduction (kW) per participant | 2                   |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.005               |
| Net average annual energy savings (kWh/year) per participant               | 3,672               |
| Net average summer coincident peak demand reduction (kW) per participant   | 1.8                 |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.004               |
| Average rebate per participant (\$US)                                      | \$15,000            |

## 3.2.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 3.2.3.1 Key Virginia program data

Table 3-5 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category         | Item                            | 2021     | 2022          | 2023         | Program total<br>(2021–2023) |
|------------------|---------------------------------|----------|---------------|--------------|------------------------------|
| Sol and they     | Direct Rebate                   |          |               |              |                              |
| Operations and   | Direct Implementation           |          |               |              |                              |
| Costs (\$)       | Direct EM&V                     |          |               |              |                              |
|                  | Indirect Other (Administrative) | \$514    | \$8,190       | \$313,041    | \$321,746                    |
|                  | Total <sup>114</sup>            | \$10,963 | \$196,159     | \$4,633,026  | \$4,840,149                  |
| Total Conta (\$) | Planned                         | \$0      | \$10,522,665  | \$10,234,165 | \$20,756,831                 |
| Total Costs (\$) | Variance                        | \$10,963 | -\$10,326,506 | -\$5,601,139 | -\$15,916,682                |
|                  | Annual % of Planned             | N/A      | 2%            | 45%          | 23%                          |
|                  | Total (Gross)                   | 0        | 7             | 130          | 137                          |
| Dentisinente     | Planned (Gross)                 | 0        | 555           | 555          | 1,110                        |
| Participants     | Variance                        | 0        | -548          | -425         | -973                         |
|                  | Annual % of Planned (Gross)     | N/A      | 1%            | 23%          | 12%                          |
| Installed        | Total Gross Deemed Savings      | 0        | 34,559        | 822,872      | 857,431                      |

#### Table 3-5. Virginia Residential IAQ Solar Program performance indicators (2021–2023)<sup>113</sup>

<sup>&</sup>lt;sup>113</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>114</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                           | Item                                       | 2021 | 2022      | 2023      | Program total<br>(2021–2023) |
|------------------------------------|--------------------------------------------|------|-----------|-----------|------------------------------|
| Energy                             | Realization Rate                           | N/A  | 100%      | 100%      | 100%                         |
| Savings                            | Realization Rate Adjustment                | 0    | 0         | 0         | 0                            |
| (Kvvn/year)                        | Adjusted Gross Savings                     | 0    | 34,559    | 822,872   | 857,431                      |
|                                    | Net-to-Gross Ratio                         | N/A  | 80%       | 80%       | 80%                          |
|                                    | Net-to-Gross Adjustment                    | 0    | -6,912    | -164,574  | -171,486                     |
|                                    | Net Adjusted Savings                       | 0    | 27,647    | 658,298   | 685,945                      |
|                                    | Planned Savings (Net)                      | 0    | 2,037,960 | 2,037,960 | 4,075,920                    |
|                                    | Annual % Toward Planned Savings<br>(Net)   | N/A  | 1%        | 32%       | 17%                          |
|                                    | Avg. Savings per Participant (Gross)       | N/A  | 4,937     | 6,330     | 6,259                        |
|                                    | Avg. Savings per Participant (Net)         | N/A  | 3,950     | 5,064     | 5,007                        |
|                                    | Total Gross Deemed Demand                  | 0    | 12        | 297       | 309                          |
|                                    | Realization Rate                           | N/A  | 100%      | 100%      | 100%                         |
|                                    | Realization Rate Adjustment                | 0    | 0         | 0         | 0                            |
|                                    | Adjusted Gross Demand                      | 0    | 12        | 297       | 309                          |
| Installed                          | Net-to-Gross Ratio                         | N/A  | 80%       | 80%       | 80%                          |
| Summer<br>Demand<br>Reduction (kW) | Net-to-Gross Adjustment                    | 0    | -3        | -59       | -62                          |
|                                    | Net Adjusted Demand                        | 0    | 10        | 237       | 247                          |
|                                    | Planned Demand (Net)                       | 0    | 976       | 976       | 1,953                        |
|                                    | Annual % Toward Planned Reduction<br>(Net) | N/A  | 1%        | 24%       | 13%                          |
|                                    | Avg. Demand per Participant (Gross)        | N/A  | 1.8       | 2.3       | 2.3                          |
|                                    | Avg. Demand per Participant (Net)          | N/A  | 1.4       | 1.8       | 1.8                          |
|                                    |                                            |      |           |           |                              |
|                                    | Total Gross Deemed Demand                  | 0    | 0         | 0         | 0                            |
|                                    | Realization Rate                           | N/A  | N/A       | N/A       | N/A                          |
|                                    | Realization Rate Adjustment                | 0    | 0         | 0         | 0                            |
|                                    | Adjusted Gross Demand                      | 0    | 0         | 0         | 0                            |
| Installed                          | Net-to-Gross Ratio                         | N/A  | N/A       | N/A       | N/A                          |
| Winter Demand                      | Net-to-Gross Adjustment                    | 0    | 0         | 0         | 0                            |
| Reduction (kW)                     | Net Adjusted Demand                        | 0    | 0         | 0         | 0                            |
|                                    | Planned Demand (Net)                       | 0    | 2.2       | 2.2       | 4.4                          |
|                                    | Annual % Toward Planned Reduction<br>(Net) | N/A  | 0%        | 0%        | 0%                           |
|                                    | Avg. Demand per Participant (Gross)        | N/A  | 0         | 0         | 0                            |
|                                    | Avg. Demand per Participant (Net)          | N/A  | 0         | 0         | 0                            |
| Cumulative                         | \$Admin. per Participant (Gross)           | N/A  | \$1,243   | \$2,349   | \$2,349                      |
| Annual                             | \$Admin. per kWh/year (Gross)              | N/A  | \$0       | \$0       | \$0                          |
| Program                            | \$Admin. per kW (Gross)                    | N/A  | \$699     | \$1,042   | \$1,042                      |



| Category    | Item                             | 2021  | 2022     | 2023     | Program total<br>(2021–2023) |
|-------------|----------------------------------|-------|----------|----------|------------------------------|
| Performance | \$EM&V per Total Costs (\$)      | 25.7% | 9.5%     | 1.8%     | 1.8%                         |
|             | \$Rebate per Participant (Gross) | N/A   | \$18,194 | \$19,048 | \$19,048                     |



## 3.2.3.2 Additional Virginia program data

The installed PV systems range between 8 and 14 panels, with the majority having 12 panels. All systems have a rated DC panel capacity between 4 kW and 5 kW. The net adjusted savings from these 130 participants reached 658 MWh/year, which is a large increase relative to 2022 (28 MWh/year). Sixty-six of the 130 previously participated in the Phase VIII Residential HVAC Program, 67 participated in the Phase VIII IAQ Enhanced Program, and 8 participated in the Phase IV IAQ Program. Some participants were enrolled in multiple programs, resulting in the cumulative count of participants across all programs exceeding 130 unique customers.



Figure 3-5. Virginia Residential IAQ Solar Program participation by IAQ program



# 3.3 Residential Income and Age Qualifying Home Improvement Enhanced Program – Virginia

## 3.3.1 Program description

The Residential Income and Age Qualifying Home Improvement Program installs energy efficiency and health and safety improvements such as lighting, appliances, and door replacements in the homes of eligible age- and income-qualifying customers in Dominion Energy's service territory. To qualify for the Program in the Virginia service territory, customers must meet the following eligibility requirements:

 Be a current Dominion Energy customer receiving electric services on a residential rate schedule



- Meets one of the following criteria:
  - Have a total household income that does not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income, whichever is greater
  - Be 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income.

Eligible customers must reside in single-family residences, town homes, mobile homes, or separately metered multifamily dwellings with electric cooling or electric heating or non-electric cooling. Multifamily facilities owned by local housing authorities are not eligible. Both owner-occupied and renter-occupied households are eligible. Renter-occupied household eligibility is contingent on the occupant being responsible for the electric bill and securing permission from the homeowner.

Customer receiving incentives through this Program are not eligible to receive incentives for the same measures through other Dominion Energy DSM programs. In addition, the Program limits each household to only one application.

To participate in the Program, Dominion Energy customers contact Dominion Energy-approved weatherization service providers. The weatherization service providers also go door-to-door in some areas of the Dominion Energy service territory to promote the Program. The Program's energy-saving and health and safety measures are shown in Table 3-6.

Table 3-6. Energy-saving measures for the Residential IAQ Program Enhanced

| End use                 | Measure                         |  |
|-------------------------|---------------------------------|--|
| Lighting                | 25W LED lamps                   |  |
|                         | 75W LED lamps                   |  |
|                         | Clothes washer                  |  |
| ENERGY STAR® Appliances | Clothes dryer                   |  |
|                         | Dishwasher                      |  |
| Domestic Hot Water      | Domestic heat pump water heater |  |
| Building Envelope       | Window film                     |  |
| Building Envelope       | Window replacement              |  |
| Health and Safety       | Door replacement                |  |



The Program begin installations on January 1, 2023. Participation began in September 2023. The Program was approved for five years beginning on January 1, 2023, and will run through December 31, 2027, under Case No. PUR-2021-00247.

## 3.3.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 3-10 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.

#### Table 3-7. Residential IAQ Home Improvement Enhanced

| Assumption                                                                 | Value                                              |
|----------------------------------------------------------------------------|----------------------------------------------------|
| Target market                                                              | Income and age-qualifying<br>residential customers |
| NTG factor                                                                 | 99%                                                |
| Measure life (years)                                                       | 19                                                 |
| Gross average annual energy savings (kWh/year) per participant             | 80                                                 |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.01                                               |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.02                                               |
| Net average annual energy savings (kWh/year) per participant               | 79                                                 |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.01                                               |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.02                                               |
| Average rebate (\$US) per participant                                      | 1,410                                              |

## 3.3.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

## 3.3.3.1 Key Virginia program data

Table 3-11 provides performance indicator data from 2022 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 3-8. Virginia Residential IAQ Home Improvement Enhanced Program performance indicators (2022–2023)<sup>115</sup>

| Category              | Item                            | 2022  | 2023     | Program total<br>(2022–2023) |
|-----------------------|---------------------------------|-------|----------|------------------------------|
|                       | Direct Rebate                   |       |          |                              |
| Operations and        | Direct Implementation           |       |          |                              |
| Management Costs (\$) | Direct EM&V                     |       |          |                              |
|                       | Indirect Other (Administrative) | \$395 | \$37,611 | \$38,006                     |

<sup>&</sup>lt;sup>115</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                 | Item                                     | 2022    | 2023        | Program total<br>(2022–2023) |
|--------------------------|------------------------------------------|---------|-------------|------------------------------|
|                          | Total <sup>116</sup>                     | \$9,466 | \$556,644   | \$566,110                    |
| Total Casta (*)          | Planned                                  | \$0     | \$1,290,561 | \$1,290,561                  |
| Total Costs (\$)         | Variance                                 | \$9,466 | -\$733,917  | -\$724,451                   |
|                          | Annual % of Planned                      | N/A     | 43%         | 44%                          |
|                          | Total (Gross)                            | 0       | 4           | 4                            |
| 2022000                  | Planned (Gross)                          | 0       | 400         | 400                          |
| Participants             | Variance                                 | 0       | -396        | -396                         |
|                          | Annual % of Planned (Gross)              | N/A     | 1%          | 1%                           |
|                          | Total Gross Deemed Savings               | 0       | 1 661       | 1 661                        |
|                          | Realization Rate                         | N/A     | 1,001       | 1,001                        |
|                          | Realization Rate Adjustment              | 0       | 0           | 0                            |
|                          | Adjusted Gross Savings                   | 0       | 1.661       | 1.661                        |
|                          | Net-to-Gross Ratio                       | N/A     | 99%         | 99%                          |
|                          | Net-to-Gross Adjustment                  | 0       | -17         | -17                          |
| Installed Energy Savings | Net Adjusted Savings                     | 0       | 1.644       | 1.644                        |
| (Kwiiiyeai)              | Planned Savings (net)                    | 0       | 31,680      | 31,680                       |
|                          | Annual % Toward Planned<br>Savings (net) | N/A     | 5.19%       | 5.19%                        |
|                          | Avg. Savings per Participant<br>(gross)  | N/A     | 415         | 415                          |
|                          | Avg. Savings per Participant (net)       | N/A     | 411         | 411                          |
|                          | Total Gross Deemed Demand                | 0       | 0.70        | 0.70                         |
|                          | Realization Rate                         | N/A     | 100%        | 100%                         |
|                          | Realization Rate Adjustment              | 0       | 0           | 0                            |
|                          | Adjusted Gross Demand                    | 0       | 0.70        | 0.70                         |
|                          | Net-to-Gross Ratio                       | N/A     | 99%         | 99%                          |
| Installed Summer         | Net-to-Gross Adjustment                  | 0       | 0           | 0                            |
| Demand Reduction         | Net Adjusted Demand                      | 0       | 0.70        | 0.70                         |
| (kW)                     | Planned Demand (net)                     | 0       | 4           | 4                            |
|                          | Annual % Toward Planned<br>Demand (net)  | 0       | 17%         | 17%                          |
|                          | Avg. Peak Demand per Participant (gross) | 0       | 0.20        | 0.20                         |
|                          | Avg. Demand per Participant (net)        | 0       | 0.20        | 0.20                         |
| Installed Winter Demand  | Total Gross Deemed Demand                | 0       | 0.60        | 0.60                         |
| installed winter Demailu |                                          | U       | 0.00        | 0.00                         |

<sup>&</sup>lt;sup>116</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category            | Item                                     | 2022  | 2023     | Program total<br>(2022–2023) |
|---------------------|------------------------------------------|-------|----------|------------------------------|
| Reduction           | Realization Rate                         | 0     | 100%     | 100%                         |
| (kW)                | Realization Rate Adjustment              | 0     | 0        | 0                            |
|                     | Adjusted Gross Demand                    | 0     | 0.60     | 0.60                         |
|                     | Net-to-Gross Ratio                       | 0     | 99%      | 99%                          |
|                     | Net-to-Gross Adjustment                  | 0     | 0        | 0                            |
|                     | Net Adjusted Demand                      | 0     | 0.60     | 0.60                         |
|                     | Planned Demand (net)                     | 0     | 8        | 8                            |
|                     | Annual % Toward Planned<br>Demand (net)  | 0     | 8%       | 8%                           |
|                     | Avg. Peak Demand per Participant (gross) | 0     | 0.20     | 0.20                         |
|                     | Avg. Demand per Participant (net)        | 0     | 0.20     | 0.20                         |
|                     | \$Admin. per Participant (gross)         | N/A   | \$9,502  | \$9,502                      |
|                     | \$Admin. per kWh/year (gross)            | N/A   | \$23     | \$23                         |
| Cumulative Annual   | \$Admin. per kW (gross)                  | N/A   | \$54,471 | \$54,471                     |
| Program Performance | \$EM&V per Total Costs (\$)              | 94.9% | 10.9%    | 10.9%                        |
|                     | \$Rebate per Participant (gross)         | N/A   | \$2,766  | \$2,766                      |


#### 3.3.3.2 Additional Virginia program data

Figure 3-6 and Figure 3-7 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

In 2023, two measure types were installed, windows and door replacements. Windows made up all of the gross energy savings for 2023 (1.7 MWh/year). Door replacements are health and safety measures and are not credited with energy savings.<sup>117</sup>

Figure 3-6. Virginia Residential IAQ Home Improvement Enhanced Program participation by measure and year



<sup>&</sup>lt;sup>117</sup> Note that the participant counts in Figure 3-6 and Figure 3-7 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 3-11), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.









Figure 3-8 and Figure 3-9 show participation and gross annual energy savings by building type and year. The rebated windows were installed in single-family homes and the door was installed in the multifamily home.

Figure 3-8. Virginia Residential IAQ Home Improvement Enhanced Program participation by building type and year











# 3.4 Residential Income and Age Qualifying Energy Efficiency Program – Virginia and North Carolina

#### 3.4.1 Program description

The Residential Income and Age Qualifying Energy Efficiency Program provides direct-install energy efficiency improvements to eligible age- and income-qualifying homeowners to reduce electric usage in Dominion Energy's service territory. To qualify for the Program in the Virginia service territory, customers must meet the following eligibility requirements:

- Be a current Dominion Energy customer receiving electric services on a residential rate schedule
- Meets one of the following criteria:
  - Have a total household income that does not exceed
     60% of the Virginia Median Income, or 80% of the Local
     Area Median Income, whichever is greater; or



- Be 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income.

To qualify for the program in the North Carolina service territory, customers must meet the following eligibility requirements, which also conform to the North Carolina State Energy Office qualification guidelines:

- Have a total household income that does not exceed 200% of the federal poverty level.
- Be 60 years of age or older and have income at or below 250% of the federal poverty level.

Both owner-occupied and renter-occupied households are eligible to participate in the program. However, participation of the renter-occupied households is conditional on their being responsible for the electric bill and either owning their homes or being able to secure permission from the owners to perform the program-qualifying installations or improvements. Eligible customers must be living in single-family residences, town homes, mobile homes, or separately metered multifamily dwellings (apartments and condominiums) with electric or non-electric heating and electric cooling. Multifamily facilities owned by local housing authorities are not eligible for the program.

Customer measures receiving incentives through this program are not eligible to receive incentives for the same measures through any other programs offered by Dominion Energy. In addition, the program limits each household to only one application.

To participate in the program, Dominion Energy customers can contact Dominion Energy-approved weatherization service providers. These weatherization service providers also go door-to-door in some areas of the Dominion Energy service territory to promote the program. The program's energy-saving products may include those shown in Table 3-9. In addition to these energy-saving measures, this program includes two safety (tier I and II) measures that address necessary safety improvements that enable the installation of the energy efficiency measures. There is also an additional "admin" measure, which provides additional payment to installation for the additional costs to provide these services to certain eligible customers.

Table 3-9. Energy-saving products for Residential IAQ Energy Efficiency Program

| End use | Measure      |  |  |  |
|---------|--------------|--|--|--|
| UNAC    | HVAC tune-up |  |  |  |
| IVAC    | Duct sealing |  |  |  |



| End use            | Measure                  |  |  |  |  |
|--------------------|--------------------------|--|--|--|--|
|                    | Attic insulation         |  |  |  |  |
| Building Envelope  | Floor insulation         |  |  |  |  |
|                    | Air sealing              |  |  |  |  |
| Domestic Hot Water | Pipe insulation          |  |  |  |  |
|                    | Tank wrap                |  |  |  |  |
|                    | Faucet aerator           |  |  |  |  |
|                    | Low-flow showerhead      |  |  |  |  |
| Lighting           | 40W and 60 WLED lamps    |  |  |  |  |
| Plug Load          | Refrigerator replacement |  |  |  |  |

The official program start date was January 1, 2022, in both Virginia and North Carolina. The first Virginia participants joined the program in May 2022. The program was designed to replace the existing DSM Phase IV Residential Income and Age Qualifying Home Improvement Program and was approved for five years beginning on January 1, 2022 under Case No. PUR-2020-00274 in Virginia and Docket No. E-22, Sub 608 in North Carolina.

It is typical for low-income programs to ramp up in March and through the spring because non-profit program partners limit program activity in the first quarter due to administrative obligations. This program typically targets multifamily homes, but in 2023,

increased efforts to increase participation in single family homes. The program had a 31% increase in participation in 2023 which may be the result of new marketing materials.

# 3.4.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 3-10 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.

Table 3-10. Virginia and North Carolina Residential IAQ Energy Efficiency initial program planning assumptions

| Assumption                                                                 | Value                                           |
|----------------------------------------------------------------------------|-------------------------------------------------|
| Target market                                                              | Income and age-qualifying residential customers |
| NTG factor                                                                 | 80%                                             |
| Measure life (years)                                                       | 11                                              |
| Gross average annual energy savings (kWh/year) per participant             | 66                                              |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.017                                           |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.034                                           |
| Net average annual energy savings (kWh/year) per participant               | 53                                              |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.014                                           |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.030                                           |
| Average rebate (US\$) per participant                                      | 525                                             |

## 3.4.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 3.4.3.1 Key Virginia program data

Table 3-11 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.



| Table 3-11. Virginia | Residential IAQ Energy | <b>Efficiency Program</b> | performance indicators | (2021-2023)118 |
|----------------------|------------------------|---------------------------|------------------------|----------------|
|----------------------|------------------------|---------------------------|------------------------|----------------|

| Category           | Category Item 2021                       |          | 2022         | 2023        | Program total<br>(2021–2023) |  |
|--------------------|------------------------------------------|----------|--------------|-------------|------------------------------|--|
|                    | Direct Rebate                            |          |              |             |                              |  |
| Operations and     | Direct Implementation                    |          |              |             |                              |  |
| Management Costs   | Direct EM&V                              |          |              |             |                              |  |
| (\$)               | Indirect Other<br>(Administrative)       | \$736    | \$244,390    | \$546,917   | \$792,042                    |  |
|                    | Total <sup>119</sup>                     | \$15,696 | \$5,853,130  | \$8,094,395 | \$13,963,221                 |  |
| Tatal Casta (A)    | Planned                                  | \$0      | \$7,426,787  | \$7,199,954 | \$14,626,741                 |  |
| Total Costs (\$)   | Variance                                 | \$15,696 | -\$1,573,657 | \$894,441   | -\$663,520                   |  |
|                    | Annual % of Planned                      | N/A      | 79%          | 112%        | 95%                          |  |
|                    | Total (Gross)                            | 0        | 4 782        | 5 151       | 9 933                        |  |
|                    | Planned (Gross)                          | 0        | 9 724        | 9 724       | 19 448                       |  |
| Participants       | Variance                                 | 0        | -4.942       | -4,573      | -9 515                       |  |
|                    | Annual % of Planned<br>(Gross)           | N/A      | 49%          | 53%         | 51%                          |  |
|                    | Total Gross Deemed<br>Savings            | 0        | 3,096,191    | 4,090,052   | 7,186,243                    |  |
|                    | Realization Rate                         | N/A      | 100%         | 100%        | 100%                         |  |
|                    | Realization Rate<br>Adjustment           | 0        | 0            | 0           | 0                            |  |
|                    | Adjusted Gross Savings                   | 0        | 3,096,191    | 4,090,052   | 7,186,243                    |  |
|                    | Net-to-Gross Ratio                       | N/A      | 80%          | 80%         | 80%                          |  |
| Installed Energy   | Net-to-Gross Adjustment                  | 0        | -619,238     | -818,010    | -1,437,249                   |  |
| Savings (kWh/year) | Net Adjusted Savings                     | 0        | 2,476,953    | 3,272,042   | 5,748,995                    |  |
|                    | Planned Savings (Net)                    | 0        | 513,427      | 513,427     | 1,026,854                    |  |
|                    | Annual % Toward<br>Planned Savings (Net) | N/A      | 482%         | 637%        | 560%                         |  |
|                    | Avg. Savings per<br>Participant (Gross)  | N/A      | 647          | 794         | 723                          |  |
|                    | Avg. Savings per<br>Participant (Net)    | N/A      | 518          | 635         | 579                          |  |
| installed Summer   | Total Gross Deemed<br>Demand             | 0        | 689.3        | 1,139.4     | 1,828.7                      |  |
| Demand Reduction   | Realization Rate                         | N/A      | 100%         | 100%        | 100%                         |  |
| (KVV)              | Realization Rate                         | 0        | 0            | 0           | 0                            |  |

<sup>118</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>119</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category          | Item                                        | 2021  | 2022   | 2023    | Program total<br>(2021–2023) |  |
|-------------------|---------------------------------------------|-------|--------|---------|------------------------------|--|
|                   | Adjustment                                  |       |        |         |                              |  |
|                   | Adjusted Gross Demand                       | 0     | 689    | 1,139   | 1,829                        |  |
|                   | Net-to-Gross Ratio                          | N/A   | 80%    | 80%     | 80%                          |  |
|                   | Net-to-Gross Adjustment                     | 0     | -138   | -228    | -366                         |  |
|                   | Net Adjusted Demand                         | 0     | 552    | 912     | 1,463                        |  |
|                   | Planned Demand (Net)                        | 0     | 132    | 132     | 264                          |  |
|                   | Annual % Toward<br>Planned Demand (Net)     | N/A   | 418%   | 691%    | 554%                         |  |
|                   | Avg. Peak Demand per<br>Participant (Gross) | N/A   | 0.10   | 0.20    | 0.20                         |  |
|                   | Avg. Demand per<br>Participant (Net)        | N/A   | 0.10   | 0.20    | 0.10                         |  |
|                   | Total Gross Deemed<br>Demand                | 0     | 1,714  | 2,258   | 3,972                        |  |
|                   | Realization Rate                            | N/A   | 100%   | 100%    | 100%                         |  |
|                   | Realization Rate<br>Adjustment              | 0     | 0      | 0       | 0                            |  |
|                   | Adjusted Gross Demand                       | 0     | 1,714  | 2,258   | 3,972                        |  |
|                   | Net-to-Gross Ratio                          | N/A   | 80%    | 80%     | 80%                          |  |
| Installed Winter  | Net-to-Gross Adjustment                     | 0     | -343   | -452    | -794                         |  |
|                   | Net Adjusted Demand                         | 0     | 1,371  | 1,806   | 3,177                        |  |
| ((()))            | Planned Demand (Net)                        | 0     | 294    | 294     | 587                          |  |
|                   | Annual % Toward<br>Planned Demand (Net)     | N/A   | 467%   | 615%    | 541%                         |  |
|                   | Avg. Peak Demand per<br>Participant (Gross) | N/A   | 0.40   | 0.40    | 0.40                         |  |
|                   | Avg. Demand per<br>Participant (Net)        | N/A   | 0.30   | 0.40    | 0.30                         |  |
|                   |                                             | 0     |        |         |                              |  |
|                   | \$Admin. per Participant<br>(Gross)         | N/A   | \$51   | \$80    | \$80                         |  |
| Cumulative Annual | \$Admin. per kWh/year<br>(Gross)            | N/A   | \$0.08 | \$0.11  | \$0.11                       |  |
| Program           | \$Admin. per kW (Gross)                     | N/A   | \$356  | \$433   | \$433                        |  |
| renormance        | \$EM&V per Total Costs                      | 68.2% | 2.0%   | 1.8%    | 1.8%                         |  |
|                   | \$Rebate per Participant<br>(Gross)         | N/A   | \$917  | \$1,047 | \$1,047                      |  |

### 3.4.3.2 Key North Carolina program data

Table 3-12 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a



comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 3-12. North Carolina Residential IAQ Energy Ef | Efficiency Prog | ram performance indicators | (2022-2023)118 |
|------------------------------------------------------|-----------------|----------------------------|----------------|
|------------------------------------------------------|-----------------|----------------------------|----------------|

| Category                               | Item                                     | 2022       | 2023       | Program total<br>(2022–2023) |  |
|----------------------------------------|------------------------------------------|------------|------------|------------------------------|--|
|                                        | Direct Rebate                            |            |            |                              |  |
| Operations and                         | Direct Implementation                    |            |            |                              |  |
| Management Costs (\$)                  | Direct EM&V                              |            |            |                              |  |
|                                        | Indirect Other (Administrative)          | \$5,904    | \$7,838    | \$13,742                     |  |
|                                        | Total <sup>119</sup>                     | \$141,404  | \$116.007  | \$257,411                    |  |
|                                        | Planned                                  | \$309.337  | \$442.311  | \$751,648                    |  |
| Total Costs (\$)                       | Variance                                 | -\$167.933 | -\$326.304 | -\$494.237                   |  |
|                                        | Annual % of Planned                      | 46%        | 26%        | 34%                          |  |
|                                        | Total (Gross)                            | 26         | 14         | 40                           |  |
|                                        | Planned (Gross)                          | 621        | 621        | 1 242                        |  |
| Participants                           | Variance                                 | -595       | -607       | -1 202                       |  |
|                                        | Annual % of Planned (Gross)              | 4%         | 2%         | 3%                           |  |
|                                        |                                          |            |            |                              |  |
|                                        | Total Gross Deemed Savings               | 47,257     | 35,341     | 82,598                       |  |
|                                        | Realization Rate                         | 100%       | 100%       | 100%                         |  |
|                                        | Realization Rate Adjustment              | 0          | 0          | 0                            |  |
|                                        | Adjusted Gross Savings                   | 47,257     | 35,341     | 82,598                       |  |
|                                        | Net-to-Gross Ratio                       | 80%        | 80%        | 80%                          |  |
| Installed Energy Savings<br>(kWb/year) | Net-to-Gross Adjustment                  | -9,451     | -7,068     | -16,520                      |  |
| (KWIII) year)                          | Net Adjusted Savings                     | 37,806     | 28,273     | 66,079                       |  |
|                                        | Planned Savings (Net)                    | 32,789     | 32,789     | 65,578                       |  |
|                                        | Annual % Toward Planned Savings (Net)    | 115.3%     | 86.2%      | 100.8%                       |  |
|                                        | Avg. Savings per Participant (Gross)     | 1,818      | 2,524      | 2,065                        |  |
|                                        | Avg. Savings per Participant (Net)       | 1,454      | 2,019      | 1,652                        |  |
|                                        | Total Grass Deemed Demend                | 16         | 8          | 23                           |  |
|                                        | Poolingtion Pote                         | 100%       | 100%       | 100%                         |  |
|                                        | Realization Rate                         | 100%       | 100%       | 100%                         |  |
|                                        | Adjusted Cress Demand                    | 16         | 0          | 22                           |  |
| Installed Summer Demand                | Net to Cross Petio                       | 90%        | 800/       | 23                           |  |
| Reduction                              | Net to Crees Adjustment                  | 2.1        | 1.6        | 4.7                          |  |
| (kW)                                   | Net Adjusted Demand                      | -3.1       | -1.0       | -4.7                         |  |
|                                        | Planned Domand (Net)                     | 12.3       | 0.3        | 10.0                         |  |
|                                        | Appual % Toward Planned Damand (Mat)     | 0.4        | 0.4        | 1110/                        |  |
|                                        | Annual 70 Toward Flaimed Demand (Net)    | 0.60       | 0.60       | 0.60                         |  |
|                                        | Avg. Feak Demand per Participant (Gross) | 0.00       | 0.00       | 0.00                         |  |



| Category                                 | Item                                     | 2022    | 2023    | Program total<br>(2022–2023) |  |
|------------------------------------------|------------------------------------------|---------|---------|------------------------------|--|
|                                          | Avg. Demand per Participant (Net)        | 0.50    | 0.40    | 0.50                         |  |
| C                                        | 1                                        |         |         |                              |  |
|                                          | Total Gross Deemed Demand                | 27      | 24      | 51                           |  |
|                                          | Realization Rate                         | 100%    | 100%    | 100%                         |  |
|                                          | Realization Rate Adjustment              | 0       | 0       | 0                            |  |
|                                          | Adjusted Gross Demand                    | 26.5    | 24.4    | 50.9                         |  |
| Installed Winter Demand                  | Net-to-Gross Ratio                       | 80%     | 80%     | 80%                          |  |
| Reduction                                | Net-to-Gross Adjustment                  | -5.3    | -4.9    | -10.2                        |  |
| (kW)                                     | Net Adjusted Demand                      | 21.2    | 19.5    | 40.7                         |  |
|                                          | Planned Demand (Net)                     | 19      | 19      | 38                           |  |
|                                          | Annual % Toward Planned Demand (Net)     | 113%    | 104%    | 109%                         |  |
|                                          | Avg. Peak Demand per Participant (Gross) | 1.0     | 1.7     | 1.3                          |  |
|                                          | Avg. Demand per Participant (Net)        | 0.8     | 1.4     | 1.0                          |  |
|                                          |                                          |         |         |                              |  |
|                                          | \$Admin. per Participant (Gross)         | \$227   | \$344   | \$344                        |  |
| 2.0.000000000                            | \$Admin. per kWh/year (Gross)            | \$0     | \$0     | \$0                          |  |
| Cumulative Annual<br>Program Performance | \$Admin. per kW (Gross)                  | \$379   | \$586   | \$586                        |  |
| riogram renormance                       | \$EM&V per Total Costs (\$)              | 3.3%    | 5.1%    | 5.1%                         |  |
|                                          | \$Rebate per Participant (Gross)         | \$3,536 | \$3,904 | \$3,904                      |  |



#### 3.4.3.3 Additional Virginia program data

Figure 3-10 and

Figure 3-11 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

In 2023, the most frequently installed measures were attic insulation, LED lamp replacement of 40W and 60W incandescent lamps, and showerheads. Attic insulation accounted for the majority (74%) of the program's gross energy savings. Lighting was also a high contributor to savings.<sup>120</sup>

Figure 3-10. Virginia Residential IAQ Energy Efficiency Energy Efficiency Program participation by measure and year



<sup>120</sup> Note that the participant counts in Figure 3-10 and

Figure 3-11 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 3-11), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 3-11. Virginia Residential IAQ Energy Efficiency Program gross annual energy savings (MWh/year) by measure and year





Figure 3-12 and Figure 3-13 show participation and gross annual energy savings by building type and year. Figure 3-12. Virginia Residential IAQ Energy Efficiency Program participation by building type and year





Figure 3-13. Virginia Residential IAQ Energy Efficiency Program gross annual energy savings (MWh/year) by building type and year





#### 3.4.3.4 Additional North Carolina program data

Figure 3-14 and Figure 3-15 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

In 2023, the most frequently installed measures were air sealing, LED replacement lamps, pipe insulation, and safety tier I measures. The measures with the highest gross energy savings in 2023, in decreasing order, were attic insulation, floor insulation, and duct sealing. These three measures made up over 67% of the gross energy savings for 2023. Safety tier I measures, which was most frequently installed, are not credited with energy savings.<sup>121</sup>

Figure 3-14. North Carolina Residential IAQ Energy Efficiency Energy Efficiency Program participation by measure and year



<sup>&</sup>lt;sup>121</sup> Note that the participant counts in Figure 3-14 and Figure 3-15 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 3-12), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 3-15. North Carolina Residential IAQ Energy Efficiency Program gross annual energy savings (MWh/year) by measure and year





Figure 3-16 and Figure 3-17 show participation and gross annual energy savings by building type and year.

Figure 3-16. North Carolina Residential IAQ Energy Efficiency Energy Efficiency Program participation by building type and year





Figure 3-17. North Carolina Residential IAQ Energy Efficiency Program gross annual energy savings (MWh/year) by building type and year





# 4 ENERGY EFFICIENCY-NON RESIDENTIAL

# 4.1 Non-Residential Heating and Cooling Efficiency – Virginia and North Carolina

#### 4.1.1 Program description

The Non-Residential Heating and Cooling Efficiency Program provides incentives to qualifying non-residential customers to either upgrade existing heating or cooling equipment or install new energy efficient equipment. All non-residential customers are eligible for this program except those who are exempt by statute or contract or have opted out. Upgrade measures eligible to receive a rebate include:

- Unitary and split AC units
- Air-source/ground-source heat pump units
- Packaged terminal AC and heat pump units
- Variable refrigerant flow units
- Water- and air-cooled chillers
- Variable frequency drives (VFDs) for HVAC applications
- Economizers

This program is implemented through a contractor network, so customers must use a participating contractor to be eligible for the rebate. Customers are not considered participants until a completed application form has been



processed and a rebate has been issued. This process can take several months since customers have 45 days after measure installation to submit their rebate application, and the Company has 90 days after receipt of the application to process it.

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019 (Case No. PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on October 1, 2019.<sup>122</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 574). The program officially launched on January 1, 2020.<sup>123</sup> Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

A major change in program delivery happened in the fall of 2021 when the program was expanded to allow customers with over 500 kW of demand to participant, per the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021. The program continued using traditional marketing methods such as bill inserts, flyers, hand-outs, phone calls, emails, and the "Manage Your Account" (MYA) online platform which includes advertising for resources to save money on facility heating and cooling. 2023 is the last year this program will be available to customers in both states. On August 3, 2023 (Case No. PUR-2022-00210), the SCC approved the Company's request to close this program and others to be consistent with the recommendations in the Company's Long-Term Plan (approved by the SCC in Case No. PUR-2021-00247) to streamline the DSM Portfolio. Customers who were previously eligible for this program can still receive rebate for measures in this program through the Phase IX Non-Residential Prescriptive program where these measures will be bundled, as approved in the same case.

<sup>122</sup> Virginia Non-Residential Heating and Cooling Efficiency Terms and Conditions.

<sup>123</sup> North Carolina Non-Residential Heating and Cooling Efficiency Terms and Conditions



# 4.1.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-1 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Assumption                                                                 | Value                     |  |
|----------------------------------------------------------------------------|---------------------------|--|
| Target market                                                              | Non-residential customers |  |
| NTG factor                                                                 | 70%                       |  |
| Measure life (years)                                                       | 15                        |  |
| Gross average annual energy savings per participant (kWh/year)             | 17,761                    |  |
| Gross average summer coincident peak demand reduction per participant (kW) | 2.53                      |  |
| Gross average winter coincident peak demand reduction per participant (kW) | 3.37                      |  |
| Net average annual energy savings per participant (kWh/year)               | 12,433                    |  |
| Net average summer coincident peak demand reduction (kW) per participant   | 1.77                      |  |
| Net average winter coincident peak demand reduction (kW) per participant   | 2.36                      |  |
| Average rebate (\$US) per participant                                      | \$1,900                   |  |

# 4.1.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.1.3.1 Key Virginia program data

Table 4-2 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 1 2  | Vincinia | Non Decider | tial Lloatin | and Coo | line Efficience | Drawnama  |             | Indiantana | 10040 00001 124 |
|------------|----------|-------------|--------------|---------|-----------------|-----------|-------------|------------|-----------------|
| Table 4-2. | viruinia | Non-Resider | illai Healin | and Coo | ind Eniciency   | / Prodram | Derformance | indicators | (2019-2023)     |
|            |          |             |              |         |                 |           |             |            |                 |

| Category                                      | Item                            | 2021     | 2022     | 2023      | Program total<br>(2019–2023) |
|-----------------------------------------------|---------------------------------|----------|----------|-----------|------------------------------|
| Operations<br>and<br>Management<br>Costs (\$) | Direct Rebate                   |          |          |           |                              |
|                                               | Direct Implementation           |          |          |           |                              |
|                                               | Direct EM&V                     |          |          |           |                              |
|                                               | Indirect Other (Administrative) | \$27,297 | \$48,993 | \$202,074 | \$328,469                    |
|                                               |                                 |          |          |           |                              |

<sup>&</sup>lt;sup>124</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category            | Item                                     | 2021         | 2022        | 2023        | Program total<br>(2019–2023) |
|---------------------|------------------------------------------|--------------|-------------|-------------|------------------------------|
|                     | Total <sup>125</sup>                     | \$582,157    | \$1,173,390 | \$2,990,710 | \$5,812,422                  |
| Total Costs         | Planned                                  | \$1,871,906  | \$1,907,579 | \$1,891,332 | \$8,723,316                  |
| (\$)                | Variance                                 | -\$1,289,750 | -\$734,189  | \$1,099,378 | -\$2,910,894                 |
|                     | Annual % of Planned                      | 31%          | 62%         | 158%        | 67%                          |
|                     | Total (Gross)                            | 44           | 51          | 26          | 151                          |
| Dortinianto         | Planned (Gross)                          | 658          | 658         | 658         | 2,982                        |
| Participants        | Variance                                 | -614         | -607        | -632        | -2,831                       |
|                     | Annual % of Planned (Gross)              | 7%           | 8%          | 4%          | 5%                           |
|                     | Total Gross Deemed Savings               | 527,840      | 10,356,854  | 16,291,782  | 29,529,116                   |
|                     | Realization Rate                         | 100%         | 100%        | 100%        | 100%                         |
|                     | Realization Rate Adjustment              | 0            | 0           | 0           | 0                            |
|                     | Adjusted Gross Savings                   | 527,840      | 10,356,854  | 16,291,782  | 29,529,116                   |
| Installed           | Net-To-Gross Ratio <sup>126</sup>        | 70%          | 70%         | 70%         | 70%                          |
| Energy              | Net-to-Gross Adjustment                  | -158,352     | -3,107,056  | -4,887,535  | -8,858,735                   |
| (kWh/year)          | Net Adjusted Savings                     | 369,488      | 7,249,798   | 11,404,247  | 20,670,381                   |
|                     | Planned Savings (Net)                    | 8,180,639    | 8,180,639   | 8,180,639   | 37,073,962                   |
|                     | Annual % Toward Planned Savings (Net)    | 4.52%        | 88.6%       | 139.4%      | 55.8%                        |
|                     | Avg. Savings per Participant (Gross)     | 11,996       | 203,076     | 626,607     | 195,557                      |
|                     | Avg. Savings per Participant (Net)       | 8,397        | 142,153     | 438,625     | 136,890                      |
|                     | Total Gross Deemed Demand                | 58.8         | 2,809.2     | 2,230.2     | 5,506.1                      |
|                     | Realization Rate                         | 100%         | 100%        | 100%        | 100%                         |
|                     | Realization Rate Adjustment              | 0            | 0           | 0           | 0                            |
| Installed           | Adjusted Gross Demand                    | 58.8         | 2,809.2     | 2,230.2     | 5,506.1                      |
| Summer              | Net-To-Gross Rate Ratio <sup>126</sup>   | 70%          | 70%         | 70%         | 70%                          |
| Demand<br>Reduction | Net-to-Gross Adjustment                  | -17.6        | -842.8      | -669.1      | -1,651.8                     |
| (kW)                | Net Adjusted Demand                      | 41.1         | 1,966.4     | 1,561.2     | 3,854.3                      |
|                     | Planned Demand (Net)                     | 1,167.4      | 1,167.4     | 1,167.4     | 5,290.5                      |
|                     | Annual % Toward Planned Demand (Net)     | 3.52%        | 168.4%      | 133.7%      | 72.9%                        |
|                     | Avg. Peak Demand per Participant (Gross) | 1.3          | 55.1        | 85.8        | 36.5                         |

<sup>&</sup>lt;sup>125</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>126</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 98% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category   | Item                                     | 2021    | 2022    | 2023     | Program total<br>(2019–2023) |
|------------|------------------------------------------|---------|---------|----------|------------------------------|
|            | Avg. Demand per Participant (Net)        | 0.9     | 38.6    | 60.0     | 25.5                         |
|            | Total Gross Deemed Demand                | 29.0    | 168.1   | 21.5     | 218.6                        |
|            | Realization Rate                         | 100%    | 100%    | 100%     | 100%                         |
|            | Realization Rate Adjustment              | 0       | 0       | 0        | 0                            |
|            | Adjusted Gross Demand                    | 29.0    | 168.1   | 21.5     | 218.6                        |
| Winter     | Net-To-Gross Rate Ratio <sup>126</sup>   | 70%     | 70%     | 70%      | 70%                          |
| Demand     | Net-to-Gross Adjustment                  | -8.7    | -50.4   | -6.4     | -65.6                        |
| Reduction  | Net Adjusted Demand                      | 20.3    | 117.7   | 15.0     | 153.0                        |
| (KVV)      | Planned Demand (Net)                     | 1,549.9 | 1,549.9 | 1,549.9  | 4,649.7                      |
|            | Annual % Toward Planned Demand (Net)     | 1.31%   | 7.59%   | 0.97%    | 3.29%                        |
|            | Avg. Peak Demand per Participant (Gross) | 0.7     | 3.3     | 0.8      | 1.8                          |
|            | Avg. Demand per Participant (Net)        | 0.5     | 2.3     | 0.6      | 1.3                          |
|            | \$Admin. per Participant (Gross)         | \$1,046 | \$1,011 | \$2,175  | \$2,175                      |
| Cumulative | \$Admin. per kWh/year (Gross)            | \$0.03  | \$0.01  | \$0.01   | \$0.01                       |
| Annual     | \$Admin. per kW (Gross)                  | \$166   | \$39    | \$60     | \$60                         |
| Program    | \$EM&V per Total Costs (\$)              | 14.7%   | 12.3%   | 7.8%     | 7.8%                         |
|            | \$Rebate per Participant (Gross)         | \$3,518 | \$7,374 | \$21,278 | \$21,278                     |

#### 4.1.3.2 Key North Carolina program data

Table 4-3 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

# Table 4-3. North Carolina Non-Residential Heating and Cooling Efficiency Program performance indicators (2020–2023)<sup>127</sup>

| Category       | Item                            | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|----------------|---------------------------------|---------|---------|---------|------------------------------|
|                | Direct Rebate                   |         |         |         |                              |
| Operations and | Direct Implementation           |         |         |         |                              |
| Costs (\$)     | Direct EM&V                     |         |         |         |                              |
|                | Indirect Other (Administrative) | \$1,582 | \$1,825 | \$2,311 | \$7,315                      |
|                |                                 |         |         |         |                              |

<sup>127</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                 | Item                                     | 2021      | 2022      | 2023      | Program total<br>(2020–2023) |
|--------------------------|------------------------------------------|-----------|-----------|-----------|------------------------------|
|                          | Total <sup>125</sup>                     | \$33,730  | \$43,699  | \$34,208  | \$142,510                    |
| Total Casta (\$)         | Planned                                  | \$116,478 | \$121,715 | \$116,189 | \$476,431                    |
| Total Costs (\$)         | Variance                                 | -\$82,748 | -\$78,016 | -\$81,981 | -\$333,921                   |
|                          | Annual % of Planned                      | 29%       | 36%       | 29%       | 30%                          |
|                          | Total (Gross)                            | 1         | 1         | 0         | 2                            |
| Deutlelesete             | Planned (Gross)                          | 42        | 42        | 42        | 168                          |
| Participants             | Variance                                 | -41       | -41       | -42       | -166                         |
|                          | Annual % of Planned (Gross)              | 2%        | 2%        | 0%        | 1%                           |
|                          | Total Gross Deemed Savings               | 2,946     | 139,559   | 0         | 142,505                      |
|                          | Realization Rate                         | 100%      | 100%      | N/A       | 100%                         |
|                          | Realization Rate Adjustment              | 0         | 0         | 0         | 0                            |
|                          | Adjusted Gross Savings                   | 2,946     | 139,559   | 0         | 142,505                      |
| Installed Energy         | Net-To-Gross Ratio <sup>126</sup>        | 70%       | 70%       | N/A       | 70%                          |
| Savings                  | Net-to-Gross Adjustment                  | -884      | -41,868   | 0         | -42,751                      |
| (kWh/year)               | Net Adjusted Savings                     | 2,062     | 97,691    | 0         | 99,753                       |
|                          | Planned Savings (Net)                    | 522,168   | 522,168   | 522,168   | 2,088,674                    |
|                          | Annual % Toward Planned Savings (Net)    | 0.39%     | 18.7%     | 0%        | 4.78%                        |
|                          | Avg. Savings per Participant (Gross)     | 2,946     | 139,559   | N/A       | 71,252                       |
|                          | Avg. Savings per Participant (Net)       | 2,062     | 97,691    | N/A       | 49,877                       |
|                          | Total Gross Deemed Demand                | 0.5       | 17.6      | 0         | 18.1                         |
|                          | Realization Rate                         | 100%      | 100%      | N/A       | 100%                         |
|                          | Realization Rate Adjustment              | 0         | 0         | 0         | 0                            |
|                          | Adjusted Gross Demand                    | 0.5       | 17.6      | 0         | 18.1                         |
| Installed                | Net-To-Gross Ratio <sup>126</sup>        | 70%       | 70%       | N/A       | 70%                          |
| Summer                   | Net-to-Gross Adjustment                  | -0.2      | -5.3      | 0         | -5.4                         |
| Demand<br>Reduction (kW) | Net Adjusted Demand                      | 0.4       | 12.3      | 0         | 12.7                         |
|                          | Planned Demand (Net)                     | 75        | 75        | 75        | 298                          |
|                          | Annual % Toward Planned Demand (Net)     | 0.47%     | 16.5%     | 0%        | 4.25%                        |
|                          | Avg. Peak Demand per Participant (Gross) | 0.5       | 17.6      | N/A       | 9.1                          |
|                          | Avg. Demand per Participant (Net)        | 0.4       | 12.3      | N/A       | 6.3                          |
|                          | Total Gross Deemed Demand                | 0.5       | 0         | 0         | 0.5                          |
| Installed Winter         | Realization Rate                         | 100%      | N/A       | N/A       | 100%                         |
| Reduction (kW)           | Realization Rate Adjustment              | 0         | 0         | 0         | 0                            |



F

| Category                                       | Item                                     | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|------------------------------------------------|------------------------------------------|---------|---------|---------|------------------------------|
|                                                | Adjusted Gross Demand                    | 0.5     | 0       | 0       | 0.5                          |
|                                                | Net-To-Gross Ratio <sup>126</sup>        | 70%     | N/A     | N/A     | 70%                          |
|                                                | Net-to-Gross Adjustment                  | -0.2    | 0       | 0       | -0.2                         |
|                                                | Net Adjusted Demand                      | 0.4     | 0       | 0       | 0.4                          |
|                                                | Planned Demand (Net)                     | 98.9    | 98.9    | 98.9    | 296.8                        |
|                                                | Annual % Toward Planned Demand (Net)     | 0.36%   | 0%      | 0%      | 0.12%                        |
|                                                | Avg. Peak Demand per Participant (Gross) | 0.5     | 0       | N/A     | 0.3                          |
|                                                | Avg. Demand per Participant (Net)        | 0.4     | 0       | N/A     | 0.2                          |
|                                                | \$Admin. per Participant (Gross)         | \$3,179 | \$2,502 | \$3,658 | \$3,658                      |
| Cumulative<br>Annual<br>Program<br>Performance | \$Admin. per kWh/year (Gross)            | \$1     | \$0.04  | \$0.05  | \$0.05                       |
|                                                | \$Admin. per kW (Gross)                  | \$6,347 | \$276   | \$404   | \$404                        |
|                                                | \$EM&V per Total Costs (\$)              | 18.0%   | 16.8%   | 17.0%   | 17.0%                        |
|                                                | \$Rebate per Participant (Gross)         | \$759   | \$6,587 | \$6,587 | \$6,587                      |



#### 4.1.3.3 Additional Virginia program data

Figure 4-1 and Figure 4-2 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Variable frequency drives (VFDs) were the most common measure in 2023, installed by 81% of participants. Unitary AC systems (Air Conditioners) were the second most implemented measure. Over the life of this program, VFDs were adopted by the majority of participants.<sup>128</sup>



Figure 4-1. Virginia Non-Residential Heating and Cooling Efficiency Program participation by measure and year

<sup>&</sup>lt;sup>128</sup> Note that the participant counts in Figure 4-1 and Figure 4-2 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-2), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



VFDs continued to deliver the greatest proportion of gross annual energy savings, accounting for 79% of savings in 2023 as shown in Figure 4-2. VFD savings increased even though quantity of participants decreased. This was due to a single participant with very large VFD and chiller upgrade projects that accounted for 72% and 15% of savings, respectively. Gross savings for all measures increased in 2023 due to this large participant.



Figure 4-2. Virginia Non-Residential Heating and Cooling Efficiency Program gross annual energy savings (MWh/year) by measure and year



Figure 4-3 and Figure 4-4 show participation and gross annual energy savings by building type and year. As shown in Figure 4-3, "Mercantile (retail, not mall)" accounted for 62% of the participants in 2023.



Figure 4-3. Virginia Non-Residential Heating and Cooling Efficiency Program participation by building type and year



"Other" building type accounted for the largest share (89%) of gross annual savings in 2023, as shown in Figure 4-4, due to one participant with large VFD and chiller upgrades accounting for 88% of program savings.



Figure 4-4. Virginia Non-Residential Heating and Cooling Efficiency Program gross annual energy savings (MWh/year) by building type and year



#### 4.1.3.4 Additional North Carolina program data

Figure 4-5 shows gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K. There were no North Carolina participants in 2023, and two participants in prior years. These two participants installed a mix of economizers, VFDs, unitary ACs, and heat pumps. Figure 4-5 shows that most of the savings were from the unitary AC and VFD.

Figure 4-5. North Carolina Non-Residential Heating and Cooling Efficiency Program gross annual energy savings (MWh/year) by measure and year





Figure 4-6 shows gross annual energy savings by building type and year. One of the participants was a "Mercantile Retail (Not Mall)" building type, and the other was "Food Sales (Convenience Store)." The "Mercantile Retail (Not Mall)" customer achieved most of the savings, as shown in Figure 4-6.

Figure 4-6. North Carolina Non-Residential Heating and Cooling Efficiency Program gross annual energy savings (MWh/Year) by building type and year





# 4.2 Non-Residential Lighting Systems and Controls (Phase VII) – Virginia and North Carolina

### 4.2.1 Program description

The Non-Residential Lighting Systems and Controls Program offers non-residential customers rebate incentives to retrofit their existing lighting system with a more energy-efficient and cost-effective lighting system. The program provides rebates for the following types of measures:

- T8 lamps with electronic ballasts
- High-performance T8 lamps
- T5 lamps with electronic ballasts
- LED lighting
- Occupancy sensors

This program is implemented through a contractor network. However, customers may also self-install equipment if they submit an initial assessment to Dominion Energy and receive approval prior to installation. Customers must perform and submit an initial assessment if they've previously participated in the program, the project contains LED measures, or the estimated rebate is \$10,000 or more.<sup>129</sup>



Upon approval, customers have 120 days to complete their projects. All Dominion Energy non-residential customers are eligible to participate except those who are exempt by statute, special contract, or have opted out. Customers are not considered participants until a completed rebate application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application and processing is completed within 90 days.

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019 (Case No. PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on October 1, 2019.<sup>130</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 573). The program officially launched on January 1, 2020. Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. A major change in program delivery happened in Fall 2021 when the program was opened to customers with over 500 kW of demand, in the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021.

# 4.2.2 Updated Gross Realization and Net-to-Gross Rates

DNV performed the Non-Residential Lighting End Use Baseline, Gross and Net Impact, and Persistence Study (the Non-Residential Lighting Study) for program year (PY) 2022.<sup>131</sup> The study resulted in updates to several key EM&V metrics including: gross realization rates (RRs), the NTG ratio, the effective useful life (EUL), and the baseline lighting power density (LPD) for new construction projects. For PY2023, DNV updated the DE TRM hours of use and recalculated the RRs. The updated RR is presented in Table 4-4 below.

<sup>129</sup> Non-Residential Lighting Systems and Controls Program Rebate Application

<sup>&</sup>lt;sup>130</sup> Virginia Non-Residential Lighting Systems and Controls Program Terms and Conditions.

<sup>&</sup>lt;sup>131</sup> "APPENDIX K, Non-Residential Lighting End Use Baseline, Gross and Net Impact, and Persistence Study," Evaluation, Measurement, and Verification Report for Virginia Electric and Power Company (Dominion Energy) Case No. PUR-2021-00247 (Virginia) Docket No. E-22, SUB 645 (North Carolina) Public Version, Prepared by DNV Energy Insights USA Inc. (DNV), June 15, 2023.



#### Table 4-4. Key metrics reported in the Non-Residential Lighting Study and applied to the 2023 EM&V results

| Key EM&V Metrics                            | Value    |
|---------------------------------------------|----------|
| Gross realization rate – energy (kWh/year)  | 105%     |
| Gross realization rate – summer demand (kW) | 102%     |
| Gross realization rate – winter demand (kW) | 99%      |
| Net-to-Gross ratio                          | 45%      |
| Effective useful life (years)               | 10 years |
| Baseline lighting power density             | +24%     |

# 4.2.3 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-5 outlines Dominion Energy's initial program planning assumptions. The definition of participants for the program is the count of unique account numbers.

Table 4-5. Non-Residential Lighting Systems and Controls Program planning assumptions

| Assumption                                                                 | 2019–2020    | 2021-2024    |
|----------------------------------------------------------------------------|--------------|--------------|
| Target market                                                              | Non-resident | al customers |
| NTG ratio                                                                  | 70           | %            |
| Measure life (years)                                                       |              | .6           |
| Gross average annual energy savings per participant (kWh/year)             | 30,006       | 27,656       |
| Gross average summer coincident peak demand reduction (kW) per participant | 8.35         | 5.96         |
| Gross average winter coincident peak demand reduction (kW) per participant | 7.75         | 5.51         |
| Net Average annual energy savings per participant (kWh/year)               | 21,004       | 19,359       |
| Net Average summer coincident peak demand reduction (kW) per participant   | 7.51         | 4.17         |
| Net average winter coincident peak demand reduction (kW) per Participant   | 6.97         | 3.86         |
| Average rebate (\$US) per participant \$2                                  |              | 586          |

## 4.2.4 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.2.4.1 Key Virginia program data

Table 4-6 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

#### Table 4-6. Virginia Non-Residential Lighting Systems and Controls Program performance indicators (2019–2023)

| Category       | Item          | 2021 | 2022 | 2023 | Program total<br>(2019–2023) |
|----------------|---------------|------|------|------|------------------------------|
| Operations and | Direct Rebate |      |      |      |                              |



| Category           | Item                                     | 2021         | 2022        | 2023        | Program total<br>(2019–2023) |
|--------------------|------------------------------------------|--------------|-------------|-------------|------------------------------|
| Management Costs   | Direct Implementation                    |              |             |             |                              |
| (\$)               | Direct EM&V                              |              |             |             |                              |
|                    | Indirect Other (Administrative)          | \$165,869    | \$114,789   | \$95,511    | \$599,273                    |
|                    | Total <sup>132</sup>                     | \$3,537,467  | \$2,749,190 | \$1,413,563 | \$12,282,466                 |
|                    | Planned                                  | \$2,192,482  | \$2,221,698 | \$49,143    | \$9,002,558                  |
| Total Costs (\$)   | Variance                                 | \$1,344,986  | \$527,493   | \$1,364,421 | \$3,279,907                  |
|                    | Annual % of Planned                      | 161%         | 124%        | 2876%       | 136%                         |
|                    | Total (Gross)                            | 388          | 103         | 69          | 1.056                        |
|                    | Planned (Gross)                          | 344          | 344         | 344         | 1,000                        |
| Participants       | Variance                                 | 44           | -151        | -275        | -934                         |
|                    | Annual % of Planned (Gross)              | 113%         | 56%         | 20%         | 53%                          |
|                    | Tatal Crass Desmad Souings               | 22 546 012   | 10 502 111  | 10 744 000  | 81 062 802                   |
|                    | Poolization Pate                         | 22,540,915   | 10,000,111  | 12,744,020  | 01,003,093                   |
|                    | Realization Rate Adjustment              | 5 411 250    | 2 070 047   | 627 221     | 17 033 857                   |
|                    | Adjusted Gross Savings                   | 27 058 172   | 20 563 057  | 13 391 951  | 98 097 750                   |
|                    | Net-To-Gross Ratio <sup>133</sup>        | 45%          | 45%         | 45%         | 45%                          |
| Installed Energy   | Net-to-Gross Adjustment                  | - 15,376,995 | -           | -7,360,018  | -53,953,762                  |
| Savings (kWh/year) | Net Adjusted Savings                     | 12,581,177   | 9,253,376   | 6,021,833   | 44,143,987                   |
|                    | Planned Savings (Net)                    | 6,659,477    | 6,659,477   | 6,659,477   | 40,100,471                   |
|                    | Annual % Toward Planned<br>Savings (Net) | 188.9%       | 139.0%      | 90.4%       | 110.1%                       |
|                    | Avg. Savings per Participant<br>(Gross)  | 58,111       | 85,923      | 184,705     | 76,765                       |
|                    | Avg. Savings per Participant (Net)       | 32,426       | 47,945      | 87,273      | 41,803                       |
|                    | Total Gross Deemad Demand                | 3 104 0      | 2 5 9 1 0   | 2 240 E     | 10 027 0                     |
|                    | Poolization Poto                         | 3,194.9      | 2,301.9     | 2,240.0     | 12,037.2                     |
| Installed Summer   | Realization Rate Adjustment              | 62.0         | 51.6        | 102%        | 240.7                        |
| Demand Reduction   | Adjusted Gross Demand                    | 3 259 9      | 2632.6      | 2 295 2     | 12 277 0                     |
| (kW)               | Net-To-Gross Ratio <sup>133</sup>        | 3,200.0      | 2,033.0     | 2,205.3     | 12,211.9                     |
|                    | Net-to-Gross Adjustment                  | -1 757 2     | -1 /20 1    | -1 222 2    | -6 620 4                     |

<sup>&</sup>lt;sup>132</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>133</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 96% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology..



| Category          | Item                                        | 2021     | 2022    | 2023    | Program total<br>(2019–2023) |
|-------------------|---------------------------------------------|----------|---------|---------|------------------------------|
|                   | Net Adjusted Demand                         | 1,466.5  | 1,185.1 | 1,028.4 | 5,525.1                      |
|                   | Planned Demand (Net)                        | 1,436.4  | 1,436.4 | 1,436.4 | 9,905.4                      |
|                   | Annual % Toward Planned<br>Demand (Net)     | 102.1%   | 82.5%   | 71.6%   | 55.8%                        |
|                   | Avg. Peak Demand per Participant<br>(Gross) | 8.2      | 13.4    | 32.5    | 11.4                         |
|                   | Avg. Demand per Participant (Net)           | 3.8      | 6.1     | 14.9    | 5.2                          |
|                   |                                             |          |         |         |                              |
|                   | Total Gross Deemed Demand                   | 2,487.7  | 1,772.8 | 1,276.4 | 5,536.9                      |
|                   | Realization Rate                            | 99%      | 99%     | 99%     | 99%                          |
|                   | Realization Rate Adjustment                 | -24.9    | -17.7   | -12.8   | -55.4                        |
|                   | Adjusted Gross Demand                       | 2,462.8  | 1,755.0 | 1,263.6 | 5,481.5                      |
|                   | Net-To-Gross Ratio <sup>133</sup>           | 45%      | 45%     | 45%     | 45%                          |
| Installed Winter  | Net-to-Gross Adjustment                     | -1,368.2 | -975.0  | -702.0  | -3,045.3                     |
| Demand Reduction  | Net Adjusted Demand                         | 1,108.3  | 789.8   | 568.6   | 2,466.7                      |
| (kW)              | Planned Demand (Net)                        | 1,326.7  | 1,326.7 | 1,326.7 | 3,980.2                      |
|                   | Annual % Toward Planned<br>Demand (Net)     | 83.5%    | 59.5%   | 42.9%   | 62.0%                        |
|                   | Avg. Peak Demand per Participant<br>(Gross) | 6.4      | 9.2     | 18.5    | 8.5                          |
|                   | Avg. Demand per Participant (Net)           | 2.9      | 4.1     | 8.2     | 3.8                          |
|                   |                                             |          |         |         |                              |
|                   | \$Admin. per Participant (Gross)            | \$490    | \$510   | \$567   | \$567                        |
| Cumulative Annual | \$Admin. per kWh/year (Gross)               | \$0.01   | \$0.01  | \$0.01  | \$0.01                       |
| Program           | \$Admin. per kW (Gross)                     | \$54     | \$51    | \$50    | \$50                         |
| Performance       | \$EM&V per Total Costs (\$)                 | 3.3%     | 4.4%    | 5.1%    | 5.1%                         |
|                   | \$Rebate per Participant (Gross)            | \$6,201  | \$6,499 | \$6,957 | \$6,957                      |

#### 4.2.4.2 Key North Carolina program data

Table 4-7 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

# Table 4-7. North Carolina Non-Residential Lighting Systems and Controls Program performance indicators (2020–2023)

| Category | Item                  | 2021 | 2022 | 2023 | Program total<br>(2020–2023) |
|----------|-----------------------|------|------|------|------------------------------|
|          | Direct Rebate         |      |      |      |                              |
|          | Direct Implementation |      |      |      |                              |



| Category                                        | Item                                  | 2021      | 2022       | 2023     | Program total<br>(2020–2023) |
|-------------------------------------------------|---------------------------------------|-----------|------------|----------|------------------------------|
| Operations and                                  | Direct EM&V                           |           |            |          |                              |
| Management<br>Costs (\$)                        | Indirect Other (Administrative)       | \$4,360   | \$8,727    | \$4,517  | \$25,261                     |
|                                                 | Total <sup>132</sup>                  | \$92,989  | \$209.012  | \$66.851 | \$529,735                    |
| Total Costs (\$)                                | Planned                               | \$136,425 | \$141,758  | \$3,019  | \$465,724                    |
|                                                 | Variance                              | -\$43,436 | \$67.255   | \$63,832 | \$64,011                     |
|                                                 | Annual % of Planned                   | 68%       | 147%       | 2214%    | 114%                         |
|                                                 |                                       |           |            |          |                              |
|                                                 | Total (Gross)                         | 5         | 12         | 3        | 29                           |
| Participants                                    | Planned (Gross)                       | 22        | 22         | 22       | 106                          |
| , an us partie                                  | Variance                              | -17       | -10        | -19      | -77                          |
|                                                 | Annual % of Planned (Gross)           | 23%       | 55%        | 14%      | 27%                          |
|                                                 | Total Gross Deemed Savings            | 189,982   | 1,478,591  | 346,305  | 2,126,691                    |
|                                                 | Realization Rate                      | 124%      | 124%       | 105%     | 121%                         |
|                                                 | Realization Rate Adjustment (100%)    | 45,596    | 354,862    | 17,315   | 444,608                      |
| Installed Energy<br>Savings<br>(kWh/year)       | Adjusted Gross Savings                | 235,578   | 1,833,452  | 363,620  | 2,571,299                    |
|                                                 | Net-To-Gross Ratio <sup>133</sup>     | 45%       | 45%        | 45%      | 45%                          |
|                                                 | Net-to-Gross Adjustment               | -129,568  | -1,008,399 | -199,991 | -1,414,214                   |
|                                                 | Net Adjusted Savings                  | 106,010   | 825,054    | 163,629  | 1,157,084                    |
|                                                 | Planned Savings (Net)                 | 425,897   | 425,897    | 425,897  | 2,117,859                    |
|                                                 | Annual % Toward Planned Savings (Net) | 24.9%     | 193.7%     | 38.4%    | 54.6%                        |
|                                                 | Avg. Savings per Participant (Gross)  | 37,996    | 123,216    | 115,435  | 73,334                       |
|                                                 | Avg. Savings per Participant (Net)    | 21,202    | 68,754     | 54,543   | 39,899                       |
|                                                 | Total Crass Doomed Domend             | 41.2      | 202.4      | 79.7     | 149.2                        |
|                                                 | Poolization Pote                      | 41.2      | 323.1      | 10.7     | 440.3                        |
| Installed<br>Summer<br>Demand<br>Reduction (kW) | Realization Rate                      | 102%      | 102%       | 102%     | 102%                         |
|                                                 | Adjusted Crees Demond                 | 12.0      | 0.5        | 0.1      | 9.0                          |
|                                                 | Adjusted Gross Demand                 | 42.0      | 329.5      | 00.2     | 437.3                        |
|                                                 | Net to Cross Adjustment               | 45%       | 43%        | 43%      | 45%                          |
|                                                 | Net Adjusted Demend                   | -22.7     | -1/7.7     | -43.5    | -240.0                       |
|                                                 | Renned Demond (Net)                   | 01.0      | 146.3      | 01.0     | 500.2                        |
|                                                 | Appuel % Toward Blapped Demond (Net)  | 20.6%     | 91.9       | 20.20/   | 10.4%                        |
|                                                 | Avg. Peak Demand per Participant      | 8.2       | 26.9       | 26.2     | 40.4%                        |
|                                                 | (Gross)                               | 3.8       | 12.4       | 12.0     | 71                           |
|                                                 | Avg. Demand per l'alticipant (ivel)   | 5.0       | 12.4       | 12.0     | 1.1                          |
| Installed Winter                                | Total Gross Deemed Demand             | 17.3      | 107.8      | 33.1     | 158.2                        |



| Category                                    | Item                                        | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|---------------------------------------------|---------------------------------------------|---------|---------|---------|------------------------------|
| Demand<br>Reduction (kW)                    | Realization Rate                            | 99%     | 99%     | 99%     | 99%                          |
|                                             | Realization Rate Adjustment                 | -0.2    | -1.1    | -0.3    | -1.6                         |
|                                             | Adjusted Gross Demand                       | 17.2    | 106.7   | 32.7    | 156.6                        |
|                                             | Net-To-Gross Ratio <sup>133</sup>           | 45%     | 45%     | 45%     | 45%                          |
|                                             | Net-to-Gross Adjustment                     | -9.5    | -59.3   | -18.2   | -87.0                        |
|                                             | Net Adjusted Demand                         | 7.7     | 48.0    | 14.7    | 70.5                         |
|                                             | Planned Demand (Net)                        | 84.8    | 84.8    | 84.8    | 254.5                        |
|                                             | Annual % Toward Planned Demand (Net)        | 9.1%    | 56.6%   | 17.4%   | 27.7%                        |
|                                             | Avg. Peak Demand per Participant<br>(Gross) | 3.5     | 9.0     | 11.0    | 7.9                          |
|                                             | Avg. Demand per Participant (Net)           | 1.5     | 4.0     | 4.9     | 3.5                          |
| Cumulative<br>Annual Program<br>Performance | \$Admin. per Participant (Gross)            | \$858   | \$798   | \$871   | \$871                        |
|                                             | \$Admin. per kWh/year (Gross)               | \$0.04  | \$0.01  | \$0.01  | \$0.01                       |
|                                             | \$Admin. per kW (Gross)                     | \$258   | \$56    | \$56    | \$56                         |
|                                             | \$EM&V per Total Costs (\$)                 | 5.1%    | 5.6%    | 6.6%    | 6.6%                         |
|                                             | \$Rebate per Participant (Gross)            | \$8,063 | \$9,200 | \$9,592 | \$9,592                      |


#### 4.2.4.3 Additional Virginia program data

Figure 4-7 and Figure 4-8 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 4-7 shows which measures were adopted by participants, by year. In 2023, the most frequently installed measure was LED lamps, installed by 100% of participants. Occupancy sensors were the second most frequently installed measure, installed by 12% of program participants. LED lamps and occupancy sensors have been the first and second most installed measures, respectively, each year since program inception.<sup>134</sup>



Figure 4-7. Virginia Non-Residential Lighting Systems and Controls Program participation by measure and year

<sup>&</sup>lt;sup>134</sup> Note that the participant counts in Figure 4-7 and Figure 4-8 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-5), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Due to LEDs being installed by all participants, they accounted for 99% of the gross annual energy savings in 2023 (Figure 4-8).

Figure 4-8. Virginia Non-Residential Lighting Systems and Controls Program gross annual energy savings (MWh/year) by measure and year





Figure 4-9 shows the net energy savings after applying the updated realization rate and NTG ratio from the Non-Residential Lighting Study.

Figure 4-9. Virginia Non-Residential Lighting Systems and Controls Program net annual energy savings (MWh/year) by measure and year





Figure 4-10 and Figure 4-11 show participation and gross annual energy savings by building type and year. Food sales (grocery) buildings had the most program participants in 2023, followed by mercantile (retail, not mall) building types.



Figure 4-10. Virginia Non-Residential Lighting Systems and Controls Program participation by building type and year



In addition to being the most common building type for program participants, food sales (grocery) building types generated the most gross annual savings (50%) of any building type in 2023 (Figure 4-11).



Figure 4-11. Virginia Non-Residential Lighting Systems and Controls Program gross annual energy savings (MWh/year) by building type and year



Figure 4-12 shows the net energy savings after applying the updated realization rate and NTG ratio from the Non-Residential Lighting Study.



Figure 4-12. Virginia Non-Residential Lighting Systems and Controls Program net annual energy savings (MWh/year) by building type and year



#### 4.2.4.4 Additional North Carolina program data

Figure 4-13 and Figure 4-14 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX K. In 2023, like in all the previous years of the program, LED lamps were installed by all participants. One participant also installed occupancy sensors. No other measures were installed in 2023.<sup>135</sup>

Figure 4-13. North Carolina Non-Residential Lighting Systems and Controls Program participation by measure and year



<sup>&</sup>lt;sup>135</sup> Note that the participant counts in Figure 4-13 and Figure 4-14 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 4-7) where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-14 shows that 98% of 2023 gross annual energy savings were realized from LED lamps.

Figure 4-14. North Carolina Non-Residential Lighting Systems and Controls Program gross annual energy savings (MWh/year) by measure and year





Figure 4-15 shows the net energy savings after applying the updated realization rate and NTG ratio from the Non-Residential Lighting Study.

Figure 4-15. North Carolina Non-Residential Lighting Systems and Controls Program net annual energy savings (MWh/year) by measure and year





Figure 4-16 and Figure 4-17 show participation and gross annual energy savings by building type and year. Figure 4-16 shows that in 2023, two out of three of the participants were reported as "other" building types.

Figure 4-16. North Carolina Non-Residential Lighting Systems and Controls Program participation by building type and year





Figure 4-17 shows that "other" building types contributed the majority (78%) of gross energy savings achieved in 2023.

Figure 4-17. North Carolina Non-Residential Lighting Systems and Controls Program gross annual energy savings by building type and year (MWh/year)





Figure 4-18 shows the net energy savings after applying the updated realization rate and NTG ratio from the Non-Residential Lighting Study.

Figure 4-18. North Carolina Non-Residential Lighting Systems and Controls Program net annual energy savings (MWh/year) by building type and year





# 4.3 Non-Residential Lighting Systems and Controls (Phase X) – Virginia and North Carolina

# 4.3.1 Program description

The Non-Residential Lighting Systems and Controls Program offers non-residential customers retrofit incentives for upgrading existing lighting systems to more energy-efficient and cost-effective systems. All Dominion Energy non-residential customers are eligible to participate except those who are exempt by statute, special contract, or have opted out. The program provides rebates for the following measures:

- T8s with electronic ballasts
- High-performance T8 lamps
- T5 lamps with electronic ballasts
- LED lighting
- Occupancy sensors

This program is implemented through a contractor network. However, customers may also self-install equipment if they submit an initial assessment and receive approval before installation. Customers must perform and submit an initial assessment if they've previously participated in the program, the project contains LED lighting measures, or the estimated rebate is \$10,000 or more.<sup>136</sup>



Upon approval, customers have 120 days to complete their projects. All Dominion Energy non-residential customers are eligible to participate except those who are exempt by statute, special contract, or have opted out. Customers are not considered participants until a completed rebate application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application, and processing is completed within 90 days.

The Virginia SCC approved this program on August 10, 2022, as part of the DSM Phase X programs, (Case No. PUR-2021-00247). The program officially launched on January 1, 2023.<sup>137</sup> The North Carolina Utilities Commission approved the program on April 24, 2023 (Docket No. E-22, SUB 666). The program launched retroactively on January 1, 2023, as an extension of the DSM Phase VII Non-Residential Lighting System and Controls Program.<sup>138</sup>

# 4.3.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-8 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

<sup>136</sup> Non-Residential Lighting Systems and Controls Program Rebate Application form.

<sup>137</sup> Virginia Non-Residential Lighting Systems and Controls Program Terms and Conditions

<sup>138</sup> North Carolina Non-Residential Lighting Systems and Controls Program Terms and Conditions



Table 4-8. Non-Residential Lighting Systems and Controls Program planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG Factor                                                                 | 90%                       |
| Measure life (years)                                                       | 11.4                      |
| Gross average annual savings per participant (kWh/year)                    | 76,921                    |
| Gross average summer coincident peak demand reduction per participant (kW) | 16.88                     |
| Gross average winter coincident peak demand reduction per participant (kW) | 15.08                     |
| Net average annual energy savings per participant (kWh/year)               | 69,229                    |
| Net average summer coincident peak demand reduction (kW) per Participant   | 15.20                     |
| Net average winter coincident peak demand reduction (kW) per Participant   | 13.60                     |
| Average rebate per participant (\$US)                                      | \$8,248                   |

# 4.3.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

## 4.3.3.1 Key Virginia program data

Table 4-9 provides performance indicator data from 2022 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 4-9. Virginia | Non-Residential Lighting | Systems and Controls | Program performance | indicators (2022-2023) |
|---------------------|--------------------------|----------------------|---------------------|------------------------|

| Category             | Item                            | 2022    | 2023         | Program total<br>(2022–2023) |
|----------------------|---------------------------------|---------|--------------|------------------------------|
| a manufacture of the | Direct Rebate                   |         |              |                              |
| Operations and       | Direct Implementation           |         |              |                              |
| Costs (\$)           | Direct EM&V                     |         |              |                              |
|                      | Indirect Other (Administrative) | \$135   | \$223,852    | \$223,986                    |
|                      | Total <sup>139</sup>            | \$3.222 | \$3.313.015  | \$3.316.237                  |
| Total Costs (\$)     | Planned                         | \$0     | \$9,719,102  | \$9,719,102                  |
|                      | Variance                        | \$3,222 | -\$6,406,087 | -\$6,402,865                 |
|                      | Annual % of Planned             | N/A     | 34%          | 34%                          |
|                      | Total (Gross)                   |         | 260          | 260                          |
|                      | Planned (Gross)                 | 0       | 912          | 912                          |
| Participants         | Variance                        | 0       | -652         | -652                         |
|                      | Annual % of Planned (Gross)     | N/A     | 29%          | 29%                          |

<sup>&</sup>lt;sup>139</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                                     | Item                                     | 2022     | 2023            | Program total<br>(2022–2023) |
|----------------------------------------------|------------------------------------------|----------|-----------------|------------------------------|
|                                              | Total Gross Deemed Savings               | 0        | 20,911,524      | 20,911,524                   |
|                                              | Realization Rate                         | N/A      | 100%            | 100%                         |
|                                              | Realization Rate Adjustment              | 0        | 0               | 0                            |
|                                              | Adjusted Gross Savings                   | 0        | 20,911,524      | 20,911,524                   |
| Installed Energy                             | Net-To-Gross Ratio                       | N/A      | 90%             | 90%                          |
| Savings                                      | Net-to-Gross Adjustment                  | 0        | -2,091,152      | -2,091,152                   |
| (kWh/year)                                   | Net Adjusted Savings                     | 0        | 18,820,372      | 18,820,372                   |
|                                              | Planned Savings (Net)                    | 0        | 63,136,757      | 63,136,757                   |
|                                              | Annual % Toward Planned Savings (Net)    | N/A      | 29.8%           | 29.8%                        |
|                                              | Avg. Savings per Participant (Gross)     | N/A      | 80,429          | 80,429                       |
|                                              | Avg. Savings per Participant (Net)       | N/A      | 72,386          | 72,386                       |
|                                              | Total Gross Deemed Demand                | ol       | 3 / 80 0        | 3 /80 0                      |
|                                              | Poolization Pote                         | N/A      | 100%            | 100%                         |
|                                              | Realization Rate                         |          | 100%            | 100%                         |
|                                              | Adjusted Grees Demond                    | 0        | 3 490 0         | 3 480 0                      |
|                                              | Adjusted Gloss Demand                    | U<br>N/A | 3,460.0         | 3,400.0                      |
| Installed<br>Summer Demand<br>Reduction (kW) | Net to Cross Adjustment                  | IN/A     | 348.0           | 90%                          |
|                                              | Net-to-Gross Adjustment                  | 0        | -340.0          | -340.0                       |
|                                              | Net Adjusted Demand                      | 0        | 3,132.0         | 3,132.0                      |
|                                              | Planned Demand (Net)                     | U        | 13,855.1        | 13,855.1                     |
|                                              | Annual % Toward Planned Demand (Net)     | N/A      | 22.6%           | 22.6%                        |
|                                              | Avg. Peak Demand per Participant (Gross) | N/A      | 13.4            | 13.4                         |
|                                              | Avg. Demand per Participant (Net)        | N/A      | 12.0            | 12.0                         |
|                                              | Total Gross Deemed Demand                | 0        | 2,163.0         | 2,163.0                      |
|                                              | Realization Rate                         | N/A      | 100%            | 100%                         |
|                                              | Realization Rate Adjustment              | 0        | 0               | 0                            |
|                                              | Adjusted Gross Demand                    | 0        | 2,163.0         | 2,163.0                      |
| Installed Winter                             | Net-To-Gross Ratio                       | N/A      | 90%             | 90%                          |
| Demand                                       | Net-to-Gross Adjustment                  | 0        | -216.3          | -216.3                       |
| Reduction (kW)                               | Net Adjusted Demand                      | 0        | 1,946.7         | 1,946.7                      |
| en et 1 - 1                                  | Planned Demand (Net)                     | 0        | 12,377.7        | 12,377.7                     |
|                                              | Annual % Toward Planned Demand (Net)     | N/A      | 15.7%           | 15.7%                        |
|                                              | Avg. Peak Demand per Participant (Gross) | N/A      | 8.3             | 8.3                          |
|                                              | Avg. Demand per Participant (Net)        | N/A      | 7.5             | 7.5                          |
|                                              | \$Admin per Participant (Grace)          | NIA      | ¢061            | ¢064                         |
| Cumulative                                   | \$4dmin.per k/Wb/year (Gross)            |          | \$001<br>\$0.01 | \$001<br>\$0.01              |
| Annual Program                               |                                          |          | φ0.01<br>ΦCA    | φ <b>υ.υ</b> Ι<br>ΦΩ4        |
| Performance                                  |                                          | N/A      | 44 Q04          | φ04<br>44 Q04                |
|                                              | ⇒EIVI&V per lotal Costs (\$)             | 94.6%    | 14.2%           | 14.2%                        |



| Category | Item                             | 2022 | 2023    | Program total<br>(2022–2023) |
|----------|----------------------------------|------|---------|------------------------------|
|          | \$Rebate per Participant (Gross) | N/A  | \$6,701 | \$6,701                      |

## 4.3.3.2 Key North Carolina program data

Table 4-10 provides performance indicator data for 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 4-10. North Carolina Non-Residential Lighting Systems and Controls Program performance indicators (2023)

| Operations and D<br>Management Costs (\$) D<br>Ir<br>Total Costs (\$) V | Direct Rebate<br>Direct Implementation<br>Direct EM&V<br>Indirect Other (Administrative)<br>Total <sup>139</sup><br>Planned<br>Variance<br>Annual % of Planned | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685<br>20% | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685 |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------|
| Operations and D<br>Management Costs (\$) D<br>Ir<br>Total Costs (\$) T | Direct Implementation<br>Direct EM&V<br>Indirect Other (Administrative)<br>Total <sup>139</sup><br>Planned<br>Variance<br>Variance                             | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685<br>20% | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685 |
| Management Costs (\$) D<br>Ir<br>Total Costs (\$) V                     | Direct EM&V<br>Indirect Other (Administrative)<br>Fotal <sup>139</sup><br>Planned<br>Variance<br>Annual % of Planned                                           | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685<br>20% | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685 |
| Total Costs (\$)                                                        | otal <sup>139</sup><br>Planned<br>Variance<br>Annual % of Planned                                                                                              | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685<br>20% | \$7,815<br>\$115,660<br>\$398,345<br>-\$282,685 |
| Total Costs (\$)                                                        | otal <sup>139</sup><br>Planned<br>/ariance<br>xnnual % of Planned                                                                                              | \$115,660<br>\$398,345<br>-\$282,685<br>20%            | \$115,660<br>\$398,345<br>-\$282,685            |
| Total Costs (\$)                                                        | Planned<br>/ariance<br>\nnual % of Planned                                                                                                                     | \$398,345<br>-\$282,685                                | \$398,345<br>-\$282,685                         |
| Total Costs (\$)                                                        | /ariance<br>nnual % of Planned                                                                                                                                 | -\$282,685                                             | -\$282,685                                      |
|                                                                         | nnual % of Planned                                                                                                                                             | 20%                                                    |                                                 |
| A                                                                       |                                                                                                                                                                | 2370                                                   | 29%                                             |
| т.                                                                      | otal (Gross)                                                                                                                                                   | 5                                                      | 5                                               |
| P                                                                       | Planned (Gross)                                                                                                                                                | 58                                                     | 58                                              |
| Varticipants                                                            | ariance                                                                                                                                                        | -53                                                    | -53                                             |
| A                                                                       | nnual % of Planned (Gross)                                                                                                                                     | 9%                                                     | 9%                                              |
| T                                                                       | otal Gross Deemed Savings                                                                                                                                      | 648,036                                                | 648,036                                         |
| R                                                                       | Realization Rate                                                                                                                                               | 100%                                                   | 100%                                            |
| R                                                                       | Realization Rate Adjustment (100%)                                                                                                                             | 0                                                      | 0                                               |
| A                                                                       | djusted Gross Savings                                                                                                                                          | 648,036                                                | 648,036                                         |
| N                                                                       | let-To-Gross Ratio                                                                                                                                             | 90%                                                    | 90%                                             |
| Installed Energy                                                        | let-to-Gross Adjustment                                                                                                                                        | -64,804                                                | -64,804                                         |
| N                                                                       | let Adjusted Savings                                                                                                                                           | 583,232                                                | 583,232                                         |
| P                                                                       | lanned Savings (Net)                                                                                                                                           | 4,015,276                                              | 4,015,276                                       |
| A                                                                       | nnual % Toward Planned Savings (Net)                                                                                                                           | 14.5%                                                  | 14.5%                                           |
| A                                                                       | vg. Savings per Participant (Gross)                                                                                                                            | 129,607                                                | 129,607                                         |
| A                                                                       | vg. Savings per Participant (Net)                                                                                                                              | 116,646                                                | 116,646                                         |
| Installed Summer                                                        | otal Gross Deemed Demand                                                                                                                                       | 123.3                                                  | 123.3                                           |
| Demand Reduction Reduction                                              | ealization Rate                                                                                                                                                | 100%                                                   | 100%                                            |
| (kW) R                                                                  | ealization Rate Adjustment                                                                                                                                     | 0                                                      | 0                                               |



| Category                              | Item                                     | 2023     | Program total<br>(2023) |
|---------------------------------------|------------------------------------------|----------|-------------------------|
| · · · · · · · · · · · · · · · · · · · | Adjusted Gross Demand                    | 123.3    | 123.3                   |
|                                       | Net-To-Gross Ratio                       | 90%      | 90%                     |
|                                       | Net-to-Gross Adjustment                  | -12.3    | -12.3                   |
|                                       | Net Adjusted Demand                      | 110.9    | 110.9                   |
|                                       | Planned Demand (Net)                     | 881.1    | 881.1                   |
|                                       | Annual % Toward Planned Demand (Net)     | 12.6%    | 12.6%                   |
|                                       | Avg. Peak Demand per Participant (Gross) | 24.7     | 24.7                    |
|                                       | Avg. Demand per Participant (Net)        | 22.2     | 22.2                    |
|                                       | Total Gross Deemed Demand                | 59.0     | 59.0                    |
|                                       | Realization Rate                         | 100%     | 100%                    |
|                                       | Realization Rate Adjustment              | 0        | 0                       |
|                                       | Adjusted Gross Demand                    | 59.0     | 59.0                    |
| Installed Winter                      | Net-To-Gross Ratio                       | 90%      | 90%                     |
| Demand Reduction                      | Net-to-Gross Adjustment                  | -5.9     | -5.9                    |
| (kW)                                  | Net Adjusted Demand                      | 53.1     | 53.1                    |
|                                       | Planned Demand (Net)                     | 787.2    | 787.2                   |
|                                       | Annual % Toward Planned Demand (Net)     | 6.74%    | 6.74%                   |
|                                       | Avg. Peak Demand per Participant (Gross) | 11.8     | 11.8                    |
|                                       | Avg. Demand per Participant (Net)        | 10.6     | 10.6                    |
|                                       | \$Admin. per Participant (Gross)         | \$1,563  | \$1,563                 |
|                                       | \$Admin. per kWh/year (Gross)            | \$0.01   | \$0.01                  |
| Cumulative Annual                     | \$Admin. per kW (Gross)                  | \$63     | \$63                    |
| Program Performance                   | \$EM&V per Total Costs (\$)              | 3.4%     | 3.4%                    |
|                                       | \$Rebate per Participant (Gross)         | \$13,685 | \$13,685                |



## 4.3.3.3 Additional Virginia program data

Figure 4-19 and Figure 4-20 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J. Figure 4-19 shows that in 2023, all the program participants installed LED lamps. Occupancy sensors were installed by 13% of program participants.<sup>140</sup>





<sup>&</sup>lt;sup>140</sup> Note that the participant counts in Figure 4-7 and Figure 4-8 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-9), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Due to the frequency of LED lamp installations, LED lamps accounted for the large majority of gross annual energy savings (99%) in 2023 (Figure 4-20).

Figure 4-20. Virginia Non-Residential Lighting Systems and Controls Program gross annual energy savings by measure and year (MWh/year)





Figure 4-21 and Figure 4-22 show the program's participation and gross annual energy savings, respectively, by building type and year. "Mercantile (retail, not mall)" building types had the most program participants in 2023 (Figure 4-21), followed by "religious worship."



Figure 4-21. Virginia Non-Residential Lighting Systems and Controls Program participation by building type and year



Figure 4-22 shows that "food sales (grocery)" building types generated 31% of gross annual savings in 2023, the most of any building type. "Other" building types accounted for 17% of the gross annual savings, the second most in 2023.



Figure 4-22. Virginia Non-Residential Lighting Systems and Controls Program gross annual energy savings by building type and year (MWh/year)



#### 4.3.3.4 Additional North Carolina program data

Figure 4-23 and Figure 4-24 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 4-23 shows that LED lamps were installed by all participants in 2023. One participant also installed occupancy sensors. No other measures were installed in 2023.<sup>141</sup>

Figure 4-23. North Carolina Non-Residential Lighting Systems and Controls Program participation by measure and year



<sup>&</sup>lt;sup>141</sup> Note that the participant counts in Figure 4-13 and Figure 4-14 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 4-9), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-24 shows that 97% of gross annual energy savings achieved in 2023 occurred from the installation of LED lamps.

Figure 4-24. North Carolina Non-Residential Lighting Systems and Controls Program gross annual energy savings (MWh/year) by measure and year





Figure 4-25 and Figure 4-26 show the program's participation and gross annual energy savings, respectively, by building type and year. Figure 4-25 shows that in 2023, "food service (fast food)" building types enrolled the most participants, accounting for 40% of program participation.







Figure 4-26 shows that "warehouse and storage" building types contributed the majority (66%) of gross energy savings achieved in 2023. The disproportionate amount of savings as compared to participation is due to one large project.







# 4.4 Non-Residential Office – Virginia and North Carolina

## 4.4.1 Program description

This program provides qualifying non-residential customers with incentives for the installation of energy efficiency improvements, consisting of recommissioning measures at small office facilities. Measures eligible to receive a rebate include:

- Reduce lighting schedule
- HVAC unit scheduling
- Temperature setback
- Condensing water temp reset
- Discharge air temperature reset
- Static pressure reset
- VAV minimum flow reduction
- Dual enthalpy economizer

This program is implemented through a contractor network, so customers must contact a participating contractor to be eligible for the rebate. All Dominion



Energy non-residential customers are eligible except those who are exempt by statute, special contract, or have opted out. Customers are not considered participants until a completed application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application and Dominion Energy has 90 days to process it.

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019, (Case No. PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on January 1, 2020.<sup>142</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 572). The program officially launched on January 1, 2020.<sup>143</sup> In 2022 the DSM Phase IX the Non-Residential Building Optimization Program was launched. This program offers all of the measures offered in the Non-Residential Office Program with some additional measures. To read more about the Building Optimization Program, please see Section 4.13.

A major change in program delivery happened in fall 2021 when the program was opened to customers with over 500 kW of demand, in the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021. Since the restriction was lifted the program has large office participants.

In 2023, there were 86 participants in Virginia and one participant in North Carolina. This is an increase from 16 participants in 2023 and the first participant in North Carolina since 2021.

On August 3, 2023 (Case No. PUR-2022-00210), the SCC approved the Company's request to close this program and others to be consistent with the recommendations in the Company's Long-Term Plan (approved by the SCC in Case No. PUR-2021-00247) to streamline the DSM Portfolio. Customers who were previously eligible for this program may receive a rebate for this program's measures through the DSM Phase IX the Non-Residential Building Optimization Program where this program's measures will be bundled.

<sup>&</sup>lt;sup>142</sup>. <u>Virginia Non-Residential Office Program Terms and Conditions</u>.

<sup>143.</sup> North Carolina Non-Residential Office Program Terms and Conditions.



# 4.4.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-11 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

#### Table 4-11. Non-Residential Office Program planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 7                         |
| Gross average annual energy savings (kWh/year) per participant             | 65,104                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 6.57                      |
| gross average winter coincident peak demand reduction (kW) per participant | 34.56                     |
| Net average annual energy savings (kwh/year) per participant               | 58,594                    |
| Net average summer coincident peak demand reduction (kW) per participant   | 5.91                      |
| Net average winter coincident peak demand reduction (kW) per participant   | 31.11                     |
| Average rebate (\$US) per participant                                      | \$6,649                   |

# 4.4.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

## 4.4.3.1 Key Virginia program data

Table 4-12 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 4-12  | Virginia | Non-Residential | Office Program   | performance | indicators | (2019-2023)144 |
|-------------|----------|-----------------|------------------|-------------|------------|----------------|
| TUDIC T-IL. | Virginia | Non-Acondentia  | Office i rograff | periornance | mulcators  | 2013-2023      |

| Item                            | 2021                                                                                 | 2022                                                                                         | 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Program total<br>(2019–2023)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Direct Rebate                   |                                                                                      |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Direct Implementation           |                                                                                      |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Direct EM&V                     |                                                                                      |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Indirect Other (Administrative) | \$37,706                                                                             | \$19,957                                                                                     | \$76,829                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | \$169,470                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                 | Item Direct Rebate Direct Implementation Direct EM&V Indirect Other (Administrative) | Item2021Direct RebateDirect ImplementationDirect EM&VIndirect Other (Administrative)\$37,706 | Item20212022Direct RebateImage: Second | Item202120222023Direct RebateImage: Second S |

<sup>&</sup>lt;sup>144</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                              | Item                                     | 2021        | 2022        | 2023        | Program total<br>(2019–2023) |
|---------------------------------------|------------------------------------------|-------------|-------------|-------------|------------------------------|
| · · · · · · · · · · · · · · · · · · · | Total <sup>145</sup>                     | \$804,161   | \$477,980   | \$1,137,077 | \$3,233,563                  |
| Total Costs                           | Planned                                  | \$1,141,410 | \$1,165,496 | \$1,196,068 | \$5,476,566                  |
| (\$)                                  | Variance                                 | -\$337,249  | -\$687,516  | -\$58,991   | \$2,243,003                  |
|                                       | Annual % of Planned                      | 70%         | 41%         | 95%         | 59%                          |
|                                       | Total (Gross)                            | 59          | 16          | 86          | 167                          |
| Participants                          | Planned (Gross)                          | 79          | 79          | 79          | 358                          |
| r articipants                         | Variance                                 | -20         | -63         | 7           | -191                         |
|                                       | Annual % of Planned (Gross)              | 75%         | 20%         | 109%        | 47%                          |
|                                       | Total Gross Deemed Savings               | 1,203,577   | 4,217,101   | 7,081,212   | 12,633,307                   |
|                                       | Realization Rate                         | 100%        | 100%        | 100%        | 100%                         |
|                                       | Realization Rate Adjustment              | 0           | 0           | 0           | 0                            |
|                                       | Adjusted Gross Savings                   | 1,203,577   | 4,217,101   | 7,081,212   | 12,633,307                   |
| Installed<br>Energy<br>Savings        | Net-to-Gross Ratio <sup>146</sup>        | 90%         | 90%         | 90%         | 90%                          |
|                                       | Net-to-Gross Adjustment                  | -120,358    | -421,710    | -708,121    | -1,263,331                   |
| (kWh/year)                            | Net Adjusted Savings                     | 1,083,219   | 3,795,391   | 6,373,091   | 11,369,976                   |
|                                       | Planned Savings (Net)                    | 4,628,911   | 4,628,911   | 4,628,911   | 20,976,586                   |
|                                       | Annual % Toward Planned Savings (Net)    | 23.4%       | 82%         | 137.7%      | 54.2%                        |
|                                       | Avg. Savings per Participant (Gross)     | 20,400      | 263,569     | 82,340      | 75,649                       |
|                                       | Avg. Savings per Participant (Net)       | 18,360      | 237,212     | 74,106      | 68,084                       |
|                                       | Total Gross Deemed Demand                | 0           | 68.6        | 19.5        | 88.1                         |
|                                       | Realization Rate                         | N/A         | 100%        | 100%        | 100%                         |
|                                       | Realization Rate Adjustment              | 0           | 0           | 0           | 0                            |
|                                       | Adjusted Gross Demand                    | 0           | 68.6        | 19.5        | 88.1                         |
| Installed                             | Net-to-Gross Ratio                       | N/A         | 90%         | 90%         | 90%                          |
| Demand                                | Net-to-Gross Adjustment <sup>146</sup>   | 0           | -6.9        | -1.9        | -8.8                         |
| Reduction                             | Net Adjusted Demand                      | 0           | 61.7        | 17.5        | 79.2                         |
| (KVV)                                 | Planned Demand (Net)                     | 467         | 467         | 467.0       | 2,116.5                      |
|                                       | Annual % Toward Planned Demand (Net)     | 0%          | 13.2%       | 3.76%       | 3.74%                        |
|                                       | Avg. Peak Demand per Participant (Gross) | 0           | 4.3         | 0.2         | 0.5                          |
|                                       | Avg. Demand per Participant (Net)        | 0           | 3.9         | 0.2         | 0.5                          |

<sup>&</sup>lt;sup>145</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>146</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 99% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category    | Item                                     | 2021    | 2022    | 2023    | Program total<br>(2019–2023) |
|-------------|------------------------------------------|---------|---------|---------|------------------------------|
| (           | Total Gross Deemed Demand                | 0       | 41.1    | 14.3    | 55.4                         |
|             | Realization Rate                         | N/A     | 100%    | 100%    | 100%                         |
|             | Realization Rate Adjustment              | 0       | 0       | 0       | 0                            |
|             | Adjusted Gross Demand                    | 0       | 41.1    | 14.3    | 55.4                         |
| Winter      | Net-to-Gross Ratio                       | N/A     | 90%     | 90%     | 90%                          |
| Demand      | Net-to-Gross Adjustment <sup>146</sup>   | 0       | -4.1    | -1.4    | -5.5                         |
| Reduction   | Net Adjusted Demand                      | 0       | 37.0    | 12.8    | 49.8                         |
| (1.44)      | Planned Demand (Net)                     | 2,458   | 2,458   | 2,457.5 | 7,372.5                      |
|             | Annual % Toward Planned Demand (Net)     | 0%      | 1.50%   | 0.52%   | 0.68%                        |
|             | Avg. Peak Demand per Participant (Gross) | 0       | 4.6     | 0.2     | 0.4                          |
|             | Avg. Demand per Participant (Net)        | 0       | 4.1     | 0.2     | 0.3                          |
|             | \$Admin. per Participant (Gross)         | \$1,118 | \$1,144 | \$1,015 | \$1,015                      |
| Cumulative  | \$Admin. per kWh/year (Gross)            | \$0.05  | \$0.02  | \$0.01  | \$0.01                       |
| Annual      | \$Admin. per kW (Gross)                  | N/A     | \$1,351 | \$1,925 | \$1,925                      |
| Performance | \$EM&V per Total Costs (\$)              | 24.3%   | 24.2%   | 18.4%   | 18.4%                        |
|             | \$Rebate per Participant (Gross)         | \$3,921 | \$4,611 | \$5,034 | \$5,034                      |

### 4.4.3.2 Key North Carolina program data

Table 4-13 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 4-13. North Carolina Non-Residential Office Program performance indicators (2020–2023)<sup>144</sup>

| Category                                      | Item                            | 2021      | 2022      | 2023      | Program total<br>(2020–2023) |
|-----------------------------------------------|---------------------------------|-----------|-----------|-----------|------------------------------|
| Operations<br>and<br>Management<br>Costs (\$) | Direct Rebate                   |           |           |           |                              |
|                                               | Direct Implementation           |           |           |           |                              |
|                                               | Direct EM&V                     |           |           |           |                              |
|                                               | Indirect Other (Administrative) | \$1,783   | \$775     | \$2,027   | \$4,585                      |
|                                               |                                 |           |           |           |                              |
| Total Costs<br>(\$)                           | Total <sup>145</sup>            | \$38,028  | \$18,553  | \$30,001  | \$107,724                    |
|                                               | Planned                         | \$71,023  | \$74,366  | \$73,457  | \$291,324                    |
|                                               | Variance                        | -\$32,995 | -\$55,812 | -\$51,316 | -\$183,600                   |
|                                               | Annual % of Planned             | 54%       | 25%       | 29%       | 37%                          |
|                                               |                                 |           |           |           |                              |
| Participants                                  | Total (Gross)                   | 2         | 0         | 1         | 3                            |
|                                               | Planned (Gross)                 | 5         | 5         | 5         | 20                           |



| Category                                           | Item                                        | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|----------------------------------------------------|---------------------------------------------|---------|---------|---------|------------------------------|
|                                                    | Variance                                    | -3      | -5      | -4      | -17                          |
|                                                    | Annual % of Planned (Gross)                 | 40%     | 0%      | 20%     | 15%                          |
|                                                    |                                             |         |         |         |                              |
| Installed<br>Energy                                | Total Gross Deemed Savings                  | 43,444  | 0       | 50,462  | 93,906                       |
|                                                    | Realization Rate                            | 100%    | N/A     | 100%    | 100%                         |
|                                                    | Realization Rate Adjustment                 | 0       | 0       | 0       | 0                            |
|                                                    | Adjusted Gross Savings                      | 43,444  | 0       | 50,462  | 93,906                       |
|                                                    | Net-to-Gross Ratio                          | 90%     | N/A     | 90%     | 90%                          |
|                                                    | Net-to-Gross Adjustment <sup>146</sup>      | -4,344  | 0       | -5,046  | -9,391                       |
| Savings                                            | Net Adjusted Savings                        | 39,100  | 0       | 45,416  | 84,516                       |
| (Kvvn/year)                                        | Planned Savings (Net)                       | 292,969 | 292,969 | 292,969 | 1,171,876                    |
|                                                    | Annual % Toward Planned<br>Savings (Net)    | 13.3%   | 0%      | 15.5%   | 7.21%                        |
|                                                    | Avg. Savings per Participant<br>(Gross)     | 21,722  | N/A     | 50,462  | 31,302                       |
|                                                    | Avg. Savings per Participant (Net)          | 19,550  | N/A     | 45,416  | 28,172                       |
|                                                    | Total Orace Desmad Demand                   |         |         | 0       |                              |
|                                                    | Total Gross Deemed Demand                   | 0       | 0       | 0       | 0                            |
|                                                    | Realization Rate                            | N/A     | N/A     | N/A     | N/A                          |
|                                                    | Realization Rate Adjustment                 | 0       | 0       | 0       | 0                            |
|                                                    | Adjusted Gross Demand                       | 0       | 0       | 0       | 0                            |
| Installed                                          | Net-to-Gross Ratio                          | N/A     | N/A     | N/A     | N/A                          |
| Summer<br>Demand<br>Reduction                      | Net-to-Gross Adjustment <sup>146</sup>      | 0       | 0       | 0       | 0                            |
|                                                    | Net Adjusted Demand                         | 0       | 0       | 0       | 0                            |
| (kW)                                               | Planned Demand (Net)                        | 30      | 30      | 30      | 118                          |
|                                                    | Annual % Toward Planned<br>Demand (Net)     | 0%      | 0%      | 0%      | 0%                           |
|                                                    | Avg. Peak Demand per Participant<br>(Gross) | 0       | N/A     | 0       | 0                            |
|                                                    | Avg. Demand per Participant (Net)           | 0       | N/A     | 0       | 0                            |
|                                                    | Total Gross Deemed Demand                   | 0       | 0       | 0       | 0                            |
|                                                    | Realization Rate                            | N/A     | N/A     | N/A     | N/A                          |
| Installed<br>Winter<br>Demand<br>Reduction<br>(kW) | Realization Rate Adjustment                 | 0       | 0       | 0       | 0                            |
|                                                    | Adjusted Gross Demand                       | 0       | 0       | 0       | 0                            |
|                                                    | Net-to-Gross Ratio                          | N/A     | N/A     | N/A     | N/A                          |
|                                                    | Net-to-Gross Adjustment <sup>146</sup>      | 0       | 0       | 0       | 0                            |
|                                                    | Net Adjusted Demand                         | 0       | 0       | 0       | 0                            |
|                                                    | Planned Demand (Net)                        | 156     | 156     | 156     | 467                          |
|                                                    | Annual % Toward Planned                     | 0%      | 0%      | 0%      | 0%                           |
|                                                    | Avg. Peak Demand per Participant<br>(Gross) | 0       | 0       | 0       | 0                            |



| Category                                       | Item                              | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|------------------------------------------------|-----------------------------------|---------|---------|---------|------------------------------|
|                                                | Avg. Demand per Participant (Net) | 0       | 0       | 0       | 0                            |
| Cumulative<br>Annual<br>Program<br>Performance | \$Admin. per Participant (Gross)  | \$892   | \$1,279 | \$1,528 | \$1,528                      |
|                                                | \$Admin. per kWh/year (Gross)     | \$0.04  | \$0.06  | \$0.05  | \$0.05                       |
|                                                | \$Admin. per kW (Gross)           | N/A     | N/A     | N/A     | N/A                          |
|                                                | \$EM&V per Total Costs (\$)       | 29.2%   | 31.5%   | 27.6%   | 27.6%                        |
|                                                | \$Rebate per Participant (Gross)  | \$4,079 | \$4,079 | \$4,354 | \$4,354                      |



#### 4.4.3.3 Additional Virginia program data

Figure 4-27 and Figure 4-28 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 4-27 shows that there were 86 participants in 2023. This is an increase from 16 participants in 2022 and 59 in 2021. In 2023 Schedule HVAC (electric heat) measures had the highest savings, followed by Schedule HVAC (gas heat), and Night Temperature Setback. There was implementation for all measures implemented in 2022, except for Reduce VAV Box Minimum Position (electric heat), but there was first time implementation of Reduce VAV Box Minimum Position (gas heat).<sup>147</sup>



Figure 4-27. Virginia Non-Residential Office Program participation by measure and year

<sup>&</sup>lt;sup>147</sup> Note that the participant counts in Figure 4-27 and Figure 4-28 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-12), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The program achieved gross annual energy savings of 7,081,212 MWh/year in 2023, as shown in Figure 4-28. The schedule HVAC measure comprises about 80% of the total savings in 2023 followed by about 10% of 2023 savings for the schedule lighting measure. The increase in savings in 2023 is predominately due to the increased number of participants.

Figure 4-28. Virginia Non-Residential Office Program gross annual energy savings (MWh/year) by measure and year





Figure 4-29 and Figure 4-30 show participation and gross annual energy savings by building type and year.

In 2023, 59% of participants were small office buildings, compared to 23% in 2022. While 2023 had a lower percentage of large building projects, the savings increased because the overall participation increased fivefold.



Figure 4-29. Virginia Non-Residential Office Program participants by building type and year



Figure 4-30. Virginia Non-Residential Office Program gross annual energy savings (MWh/year) by building type and year





#### 4.4.3.4 Additional North Carolina program data

Figure 4-31 and Figure 4-32 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 4-31 shows that 2021 was the first year there was participation in North Carolina. Schedule HVAC and night temperature setback were implemented. There were no participants in 2022. There was one participant in 2023 and schedule lighting was implemented for the first time.<sup>148</sup>

1 All Measures 2 1 Night Temperature Setback 2 Measure 1 Schedule HVAC (gas heat) Schedule Lighting 2023 2021 2 0 1 Participation

Figure 4-31. North Carolina Non-Residential Office Program participation by measure and year

<sup>&</sup>lt;sup>148</sup> Note that the participant counts in Figure 4-31 and Figure 4-32 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 4-13), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.


The program achieved gross annual energy savings of 50 MWh/year in 2023, as shown in Figure 4-32. Schedule HVAC (gas heat) generated the vast majority of savings, accounting for approximately 88% of 2023 savings.

Figure 4-32. North Carolina Non-Residential Office Program gross annual energy savings (MWh/year) by measure and year





Figure 4-33 and Figure 4-34 show participation and gross annual energy savings by building type and year.

In both 2021 and 2023, all project participants were small office buildings.

Figure 4-33. North Carolina Non-Residential Office Program participation by building type and year





Figure 4-34. North Carolina Non-Residential Office Program gross annual energy savings (MWh/year) by building type and year





# 4.5 Non-Residential Small Manufacturing – Virginia and North Carolina

## 4.5.1 Program description

This program provides qualifying non-residential customers with incentives for the installation of energy efficiency improvements, consisting of primarily compressed air system measures for small manufacturing facilities.



This program is implemented through a contractor network, so customers must contact a participating contractor to be eligible for the rebate. All Dominion Energy non-residential customers are eligible except those who are exempt by statute or special contract, or who have opted out. Customers are not considered participants until a completed application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application and Dominion Energy has 90 days to process it.

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019, (Case No. PUR-2018-

00168) for a five-year period of July 1, 2019 through June 30, 2024. In Virginia, the program officially launched on January 1, 2020.<sup>149</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 571). In North Carolina, the program officially launched on January 1, 2020. Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. A major change in program delivery happened in the fall of 2021 when the eligibility cap of customers with 500 kW of demand was removed in the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021. Since the restriction was lifted, the program experienced a significant increase in enrollment as of the beginning of 2022.

2023 was the last year this program was available to customers in both states. On August 3, 2023, the SCC approved the Company's request (Case No. PUR-2022-00210) to close this program and others to be consistent with the recommendations in the Company's Long-Term Plan (approved by the SCC in Case No. PUR-2021-00247) to streamline the DSM Portfolio. Customers who were previously eligible for this program can still receive a rebate for this measure through the Phase IX Non-Residential Prescriptive program where this measure will be bundled, as was approved in the same case.

# 4.5.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach included reviewing the tracking data and reviewing the implementer-provided savings calculation files to estimate gross energy savings and demand reductions to ensure overall consistency with the DE TRM methodologies in APPENDIX F. In addition to adhering to the DE TRM methodologies, the implementer calculation files also account for, when appropriate, 1) interactivity between measures and 2) multiple compressor systems. The definition of participants for the program is the count of unique account numbers.

#### Table 4-14. Non-Residential Small Manufacturing Program planning assumptions

| Assumption    | Value                     |
|---------------|---------------------------|
| Target market | Non-residential customers |
| NTG factor    | 90%                       |

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| Assumption                                                                 | Value      |
|----------------------------------------------------------------------------|------------|
| Measure life (years)                                                       | 12.24      |
| Gross average annual energy savings (kWh/year) per participant             | 50,767     |
| Gross average summer coincident peak demand reduction (kW) per participant | 10.69      |
| Gross average winter coincident peak demand reduction (kW) per participant | 10.69      |
| Net average annual energy savings (kWh/year) per participant               | 45,690     |
| Net average summer coincident peak demand reduction (kW) per participant   | 9.62       |
| Net average winter coincident peak demand reduction (kW) per participant   | 9.62       |
| Average rebate per participant (\$US)                                      | \$9,815.00 |

## 4.5.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.5.3.1 Key Virginia program data

Table 4-15 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

#### Table 4-15. Virginia Non-Residential Small Manufacturing Program performance indicators (2019–2023)<sup>150</sup>

| Category         | Item                            | 2021        | 2022        | 2023        | Program total<br>(2019–2023) |
|------------------|---------------------------------|-------------|-------------|-------------|------------------------------|
| Operations and   | Direct Rebate                   |             |             |             |                              |
|                  | Direct Implementation           |             |             |             |                              |
| (\$)             | Direct EM&V                     |             |             |             |                              |
| <u></u>          | Indirect Other (Administrative) | \$13,158    | \$29,048    | \$78,936    | \$151,236                    |
|                  | Total <sup>151</sup>            | \$280,616   | \$695,693   | \$1,168,250 | \$2,843,577                  |
| Tatal Casta (f)  | Planned                         | \$1,235,523 | \$1,244,758 | \$1,282,670 | \$5,852,818                  |
| Total Costs (\$) | Variance                        | -\$954,907  | -\$549,065  | -\$114,420  | -\$3,009,241                 |
|                  | Annual % of Planned             | 23%         | 56%         | 91%         | 49%                          |
|                  | Total (Gross)                   | 1           | 19          | 42          | 62                           |
|                  | Planned (Gross)                 | 66          | 66          | 66          | 299                          |
| Participants     | Variance                        | -65         | -47         | -24         | -237                         |
|                  | Annual % of Planned (Gross)     | 2%          | 29%         | 64%         | 21%                          |

<sup>150</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>151</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category         | Item                                        | 2021      | 2022      | 2023      | Program total<br>(2019–2023) |
|------------------|---------------------------------------------|-----------|-----------|-----------|------------------------------|
|                  |                                             |           |           |           |                              |
|                  | Total Gross Deemed Savings                  | 112,237   | 4,886,095 | 7,692,863 | 12,691,195                   |
|                  | Realization Rate                            | 100%      | 100%      | 100%      | 100%                         |
|                  | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                            |
|                  | Adjusted Gross Savings                      | 112,237   | 4,886,095 | 7,692,863 | 12,691,195                   |
|                  | Net-to-Gross Ratio <sup>152</sup>           | 90%       | 90%       | 90%       | 90%                          |
| Installed Energy | Net-to-Gross Adjustment                     | -11,224   | -488,610  | -769,286  | -1,269,120                   |
| Savings          | Net Adjusted Savings                        | 101,013   | 4,397,486 | 6,923,577 | 11,422,076                   |
| (kWh/year)       | Planned Savings (Net)                       | 3,015,551 | 3,015,551 | 3,015,551 | 13,661,361                   |
|                  | Annual % Toward Planned<br>Savings (Net)    | 3.35%     | 145.8%    | 229.6%    | 83.6%                        |
|                  | Avg. Savings per Participant<br>(Gross)     | 112,237   | 257,163   | 183,163   | 204,697                      |
|                  | Avg. Savings per Participant<br>(Net)       | 101,013   | 231,447   | 164,847   | 184,227                      |
|                  |                                             | , ,       | ,         |           |                              |
|                  | Total Gross Deemed Demand                   | 23        | 582       | 928       | 1,533                        |
|                  | Realization Rate                            | 100%      | 100%      | 100%      | 100%                         |
|                  | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                            |
|                  | Adjusted Gross Demand                       | 23        | 582       | 928       | 1,533                        |
|                  | Net-to-Gross Ratio <sup>152</sup>           | 90%       | 90%       | 90%       | 90%                          |
| Installed Summer | Net-to-Gross Adjustment                     | -2        | -58       | -93       | -153                         |
| Demand Reduction | Net Adjusted Demand                         | 21        | 524       | 835       | 1,380                        |
| (kW)             | Planned Demand (Net)                        | 635       | 635       | 635       | 2,876                        |
|                  | Annual % Toward Planned<br>Demand (Net)     | 3%        | 83%       | 132%      | 48%                          |
|                  | Avg. Peak Demand per<br>Participant (Gross) | 23        | 31        | 22        | 25                           |
|                  | Avg. Demand per Participant<br>(Net)        | 21        | 28        | 20        | 22                           |
|                  |                                             |           |           |           |                              |
| The same         | Total Gross Deemed Demand                   | 23        | 582       | 928       | 1,533                        |
| Installed Winter | Realization Rate                            | 100%      | 100%      | 100%      | 100%                         |
| (kW)             | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                            |
|                  | Adjusted Gross Demand                       | 23        | 582       | 928       | 1,533                        |

<sup>&</sup>lt;sup>152</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 96% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                               | Item                                        | 2021     | 2022     | 2023     | Program total<br>(2019–2023) |
|----------------------------------------|---------------------------------------------|----------|----------|----------|------------------------------|
|                                        | Net-to-Gross Ratio <sup>152</sup>           | 90%      | 90%      | 90%      | 90%                          |
|                                        | Net-to-Gross Adjustment                     | -2       | -58      | -93      | -153                         |
|                                        | Net Adjusted Demand                         | 21       | 524      | 835      | 1,380                        |
|                                        | Planned Demand (Net)                        | 635      | 635      | 635      | 1,905                        |
|                                        | Annual % Toward Planned<br>Demand (Net)     | 3%       | 83%      | 132%     | 73%                          |
|                                        | Avg. Peak Demand per<br>Participant (Gross) | 23       | 31       | 22       | 25                           |
|                                        | Avg. Demand per Participant<br>(Net)        | 21       | 28       | 20       | 22                           |
|                                        |                                             |          |          |          |                              |
|                                        | \$Admin. Per Participant (Gross)            | \$43,253 | \$3,615  | \$2,439  | \$2,439                      |
| Cumulative<br>Program ´<br>Performance | \$Admin. per kWh/year (Gross)               | \$0.39   | \$0.01   | \$0.01   | \$0.01                       |
|                                        | \$Admin. Per kW (Gross)                     | \$1,864  | \$119    | \$99     | \$99                         |
|                                        | \$EM&V per Total Costs (\$)                 | 22.7%    | 18.1%    | 14.3%    | 14.3%                        |
|                                        | \$Rebate per Participant (Gross)            | \$10,307 | \$17,149 | \$14,748 | \$14,748                     |

#### 4.5.3.2 Key North Carolina program data

Table 4-16 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 4-16. North Carolina Non-Residential Small Manufacturing Program performance indicators (2020–2023) | rogram performance indicators (2020–2023) <sup>150</sup> |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------|

| Category          | Item                            | 2021      | 2022      | 2023     | Program total<br>(2020–2023) |
|-------------------|---------------------------------|-----------|-----------|----------|------------------------------|
| Operations and    | Direct Rebate                   |           |           |          |                              |
|                   | Direct Implementation           |           |           |          |                              |
| (\$)              | Direct EM&V                     |           |           |          |                              |
|                   | Indirect Other (Administrative) | \$809     | \$676     | \$5,164  | \$7,635                      |
| i.                |                                 |           | 1         |          |                              |
| · · · · · · · · · | Total <sup>151</sup>            | \$17,245  | \$16,181  | \$76,431 | \$128,844                    |
| Total Coata (\$)  | Planned                         | \$76,879  | \$79,423  | \$78,798 | \$313,023                    |
| Total Costs (\$)  | Variance                        | -\$59,634 | -\$63,242 | -\$2,366 | -\$184,179                   |
|                   | Annual % of Planned             | 22%       | 20%       | 97%      | 41%                          |
| Participants      | Total (Gross)                   | 0         | ٥١        | 4        | 1                            |



| Category           | Item                                        | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|--------------------|---------------------------------------------|---------|---------|---------|------------------------------|
|                    | Planned (Gross)                             | 4       | 4       | 4       | 16                           |
|                    | Variance                                    | -4      | -4      | 0       | -12                          |
|                    | Annual % of Planned (Gross)                 | 0%      | 0%      | 100%    | 25%                          |
| <u></u>            | Total Gross Deemed Savings                  | . 0     | ol      | 419 942 | 419 942                      |
|                    | Realization Rate                            | N/A     | N/A     | 100%    | 100%                         |
|                    | Realization Rate Adjustment                 | 0       | 0       | 0       | 0                            |
|                    | Adjusted Gross Savings                      | 0       | 0       | 419 942 | 419 942                      |
|                    | Net-to-Gross Ratio <sup>152</sup>           | N/A     | N/A     | 90%     | 90%                          |
|                    | Net-to-Gross Adjustment                     | 0       | 0       | -41,994 | -41,994                      |
| Installed Energy   | Net Adjusted Savings                        | 0       | 0       | 377.948 | 377.948                      |
| Savings (kWh/year) | Planned Savings (Net)                       | 182,761 | 182.761 | 182.761 | 731.043                      |
|                    | Annual % Toward Planned<br>Savings (Net)    | 0%      | 0%      | 206.8%  | 51.7%                        |
|                    | Avg. Savings per Participant<br>(Gross)     | N/A     | N/A     | 104,985 | 104,985                      |
|                    | Avg. Savings per Participant<br>(Net)       | N/A     | N/A     | 94,487  | 94,487                       |
|                    | 1                                           |         |         | 1       |                              |
|                    | Total Gross Deemed Demand                   | 0       | 0       | 46.4    | 46.4                         |
|                    | Realization Rate                            | N/A     | N/A     | 100%    | 100%                         |
|                    | Realization Rate Adjustment                 | 0       | 0       | 0       | 0                            |
|                    | Adjusted Gross Demand                       | 0       | 0       | 46.4    | 46.4                         |
|                    | Net-to-Gross Ratio <sup>152</sup>           | N/A     | N/A     | 90%     | 90%                          |
| Installed Summer   | Net-to-Gross Adjustment                     | 0       | 0       | -4.6    | -4.6                         |
| Demand Reduction   | Net Adjusted Demand                         | 0       | 0       | 41.8    | 41.8                         |
| (KW)               | Planned Demand (Net)                        | 39      | 39      | 39      | 154                          |
|                    | Annual % Toward Planned<br>Demand (Net)     | 0%      | 0%      | 108.6%  | 27.1%                        |
|                    | Avg. Peak Demand per<br>Participant (Gross) | N/A     | N/A     | 12      | 12                           |
|                    | Avg. Demand per Participant<br>(Net)        | N/A     | N/A     | 10      | 10                           |
|                    | Total Gross Deemed Demand                   | 0       | 0       | 16      | 40                           |
| Installed Winter   | Realization Rate                            | N/A     |         | 100%    | 40                           |
| Demand Reduction   | Realization Rate Adjustment                 |         |         | 100%    | 100%                         |
| (KVV)              | Adjusted Gross Demand                       | 0       | 0       | 46      | 46.4                         |
|                    | Aujusieu Gross Demanu                       | U       | U       | 40      | 40.4                         |



| Category                                 | Item                                        | 2021  | 2022  | 2023    | Program total<br>(2020–2023) |
|------------------------------------------|---------------------------------------------|-------|-------|---------|------------------------------|
|                                          | Net-to-Gross Ratio <sup>152</sup>           | N/A   | N/A   | 90%     | 90%                          |
|                                          | Net-to-Gross Adjustment                     | 0     | 0     | -4.6    | -4.6                         |
|                                          | Net Adjusted Demand                         | 0     | 0     | 41.8    | 41.8                         |
|                                          | Planned Demand (Net)                        | 38.5  | 38.5  | 38.5    | 115.4                        |
|                                          | Annual % Toward Planned<br>Demand (Net)     | 0%    | 0%    | 108.6%  | 36.2%                        |
|                                          | Avg. Peak Demand per<br>Participant (Gross) | N/A   | N/A   | 11.6    | 11.6                         |
|                                          | Avg. Demand per Participant<br>(Net)        | N/A   | N/A   | 10.4    | 10.4                         |
|                                          |                                             | 1     |       |         |                              |
| Cumulative Annual<br>Program Performance | \$Admin. per Participant<br>(Gross)         | N/A   | N/A   | \$1,909 | \$1,909                      |
|                                          | \$Admin. per kWh/year (Gross)               | N/A   | N/A   | \$0.02  | \$0.02                       |
|                                          | \$Admin. per kW (Gross)                     | N/A   | N/A   | \$165   | \$165                        |
|                                          | \$EM&V per Total Costs (\$)                 | 20.9% | 24.0% | 14.5%   | 14.5%                        |
|                                          | \$Rebate per Participant<br>(Gross)         | N/A   | N/A   | \$9,124 | \$9,124                      |



#### 4.5.3.3 Additional Virginia program data

Figure 4-35 and Figure 4-36 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

There were eight measure types implemented across the program in 2023. Except for the dewpoint control measure which had one participant, each measure had at least eight participants. The leak repair measure had 29 participants, which is the most participants for any given measure.<sup>153</sup>

Figure 4-35. Virginia Non-Residential Small Manufacturing Program participation by measure and year



<sup>&</sup>lt;sup>153</sup> Note that the participant counts in Figure 4-35 and Figure 4-36 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-15), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The program achieved gross annual energy savings of 7,693 MWh/year in 2023. Leak repairs of compressor systems generated the largest share (73%) of the savings.

Figure 4-36. Virginia Non-Residential Small Manufacturing Program gross annual energy savings (MWh/year) by measure and year





Figure 4-37 and Figure 4-38 show participation and gross annual energy savings by building type and year. In 2023, participation and savings were both highest from "Other" building type, with 39 participants contributing to 7,508 MWh/year savings.



Figure 4-37. Virginia Non-Residential Small Manufacturing Program participation by building type and year



Figure 4-38. Virginia Non-Residential Small Manufacturing Program gross annual energy savings (MWh/year) by building type and year





## 4.5.3.4 Additional North Carolina program data

Figure 4-39Figure 4-39 and Figure 4-40 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K. Figure 4-39 shows there were six unique measures implemented by four participants.<sup>154</sup>

Figure 4-39. North Carolina Non-Residential Small Manufacturing Program participation by measure and year



<sup>&</sup>lt;sup>154</sup> Note that the participant counts in Figure 4-39 and Figure 4-40 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 4-16), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The program achieved gross annual energy savings of 420 MWh/year during 2023 in North Carolina. As shown in Figure 4-74 Figure 4-40, variable speed drives (VSD) generated the largest share (69%) of the savings for this program.

Figure 4-40. North Carolina Non-Residential Small Manufacturing Program gross annual energy savings (MWh/year) by measure and year





# 4.6 Non-Residential Window Film – Virginia and North Carolina

#### 4.6.1 Program description

The Non-Residential Window Film Program provides incentives to qualifying non-residential customers to install solar reduction window film to lower their cooling bills and improve occupant comfort.

This program is implemented through a contractor network, so customers must contact a participating contractor to be eligible for the rebate. All Dominion Energy non-residential customers are eligible except those who are exempt by statute or special contract, or who have opted out of participating in energy efficiency programs. Customers who have previously received a rebate from the Non-Residential Window Film Program are not eligible to receive another



rebate for installing the same measure on the same window.

An initial assessment must be completed and submitted for the following types of projects before the work can be initiated:

- · Past participants who have previously received a rebate from the Non-Residential Window Film Program
- All projects with an estimated rebate amount of \$10,000 or more
- All self-install projects

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019, (Case No. PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on October 1, 2019.<sup>155</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 570). The program officially launched on January 1, 2020. Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. A major change in program delivery happened in fall 2021 when the program was opened to customers with over 500 kW of demand, in the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021. 2023 is the last year this program will be available to customers in both states. On August 3, 2023 (Case No. PUR-2022-00210), the SCC approved the Company's request to close this program and others to be consistent with the recommendations in the Company's Long-Term Plan (approved by the SCC in Case No. PUR-2021-00247) to streamline the DSM Portfolio. Customers who were previously eligible for this program can still receive a rebate for this measure through the Phase IX Non-Residential Prescriptive program where this measure will be bundled, as approved in the same case.

# 4.6.2 Methods for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-17 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

<sup>155</sup> Virginia Non-Residential Window Film Program Terms and Conditions.



#### Table 4-17. Non-Residential Window Film Program planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-Residential customers |
| NTG factor                                                                 | 80%                       |
| Measure life (years)                                                       | 10                        |
| Gross average annual energy savings (kWh/year) per participant             | 16.55                     |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.0048                    |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.0038                    |
| Net average annual energy savings (kWh/year) per participant               | 13.24                     |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.0038                    |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.0030                    |
| Average rebate per square foot of window film                              | \$1                       |

## 4.6.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.6.3.1 Key Virginia program data

Table 4-18 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category         | Item                            | 2021       | 2022       | 2023       | Program<br>total<br>(2019–2023) |
|------------------|---------------------------------|------------|------------|------------|---------------------------------|
| Operations and   | Direct Rebate                   |            |            |            |                                 |
|                  | Direct Implementation           |            |            |            |                                 |
| (\$)             | Direct EM&V                     |            |            |            |                                 |
| (4)              | Indirect Other (Administrative) | \$15,262   | \$11,429   | \$17,205   | \$69,436                        |
|                  |                                 |            |            |            |                                 |
|                  | Total <sup>157</sup>            | \$325,497  | \$273,733  | \$254,640  | \$1,402,899                     |
| Total Costs (\$) | Planned                         | \$435,863  | \$444,630  | \$425,879  | \$2,069,223                     |
| Total Costs (\$) | Variance                        | -\$110,366 | -\$170,897 | -\$171,240 | -\$666,325                      |
|                  | Annual % of Planned             | 75%        | 62%        | 60%        | 68%                             |
|                  | Total (Gross)                   | 19         | 28         | 17         | 86                              |
| Participants     | Total Square Feet               | 21,212     | 17,711     | 23,871     | 125,719                         |

#### Table 4-18. Virginia Non-Residential Window Film Program performance indicators (2019–2023)<sup>156</sup>

<sup>156</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>157</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                               | Item                                             | 2021      | 2022      | 2023      | Program<br>total<br>(2019–2023) |
|----------------------------------------|--------------------------------------------------|-----------|-----------|-----------|---------------------------------|
|                                        | Planned Square Feet (Gross)                      | 125,913   | 125,913   | 125,913   | 572,052                         |
|                                        | Variance                                         | -104,701  | -108,202  | -102,042  | -446,333                        |
|                                        | Annual % of Planned (Gross)                      | 17%       | 14%       | 19%       | 22%                             |
|                                        | Total Square Feet                                | 21,212    | 17,711    | 23,871    | 125,719                         |
|                                        | North Facing                                     | 9,861     | 3,507     | 10,916    | 48,158                          |
| Square Feet                            | East Facing                                      | 9,480     | 5,414     | 3,659     | 30,405                          |
|                                        | West Facing                                      | 1,431     | 2,179     | 1,451     | 8,063                           |
|                                        | South Facing                                     | 440       | 6,611     | 7,845     | 39,093                          |
|                                        | Total Gross Deemed Savings                       | 79 659    | 180 206   | 73 351    | 583 683                         |
|                                        | Peolization Pate                                 | 100%      | 100,200   | 100%      | 100%                            |
|                                        | Realization Rate Adjustment                      | 100 %     | 0         | 0         | 100 %                           |
|                                        | Adjusted Gross Savings                           | 79.659    | 180 206   | 73 351    | 583 683                         |
|                                        | Net-To-Gross Ratio <sup>158</sup>                | 80%       | 80%       | 80%       | 80%                             |
|                                        | Net-to-Gross Adjustment                          | -15 932   | -36.059   | -14 670   | -116 737                        |
|                                        | Net Adjusted Savings                             | 63 727    | 144 237   | 58 681    | 466 946                         |
|                                        | Planned Savings (Net)                            | 1 662 052 | 1 662 052 | 1 662 052 | 7 551 086                       |
| Installed Energy<br>Savings (kWh/year) | Annual % Toward Planned<br>Savings (Net)         | 3.83%     | 8.68%     | 3.53%     | 6.18%                           |
|                                        | Avg. Savings per Participant<br>(Gross)          | 4,193     | 6,439     | 4,315     | 6,787                           |
|                                        | Avg. Gross Savings Per<br>Square Foot (kWh/year) | 3.8       | 10.2      | 3.1       | 4.6                             |
|                                        | Avg. Savings per Participant<br>(Net)            | 3,354     | 5,151     | 3,452     | 5,430                           |
|                                        | Avg. Net Savings Per Square<br>Foot (kWh/year)   | 3.0       | 8.1       | 2.5       | 3.7                             |
|                                        |                                                  |           |           |           |                                 |
|                                        | Total Gross Deemed Demand                        | 0         | 0         | 0         | 78.1                            |
|                                        | Realization Rate                                 | N/A       | N/A       | N/A       | 100%                            |
| Installed Summer                       | Realization Rate Adjustment                      | 0         | 0         | 0         | 0                               |
| Demand Reduction                       | Adjusted Gross Demand                            | 0         | 0         | 0         | 78.1                            |
| (kW)                                   | Net-to-Gross Ratio                               | N/A       | N/A       | N/A       | 80%                             |
|                                        | Net-to-Gross Adjustment <sup>158</sup>           | 0         | 0         | 0         | -15.6                           |
|                                        | Net Adjusted Demand                              | 0         | 0         | 0         | 62.5                            |
|                                        | Planned Demand (Net)                             | 483.5     | 483.5     | 483.5     | 2,196.7                         |

<sup>&</sup>lt;sup>158</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 97% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                     | Item                                                | 2021    | 2022    | 2023    | Program<br>total<br>(2019–2023) |
|----------------------------------------------|-----------------------------------------------------|---------|---------|---------|---------------------------------|
|                                              | Annual % Toward Planned<br>Demand (Net)             | 0%      | 0%      | 0%      | 2.84%                           |
|                                              | Avg. Peak Demand per<br>Participant (Gross)         | 0       | 0       | 0       | 0.9                             |
|                                              | Avg. Gross Demand Reduction<br>Per Square Foot (kW) | 0       | 0       | 0       | 0.001                           |
|                                              | Avg. Demand per Participant<br>(Net)                | 0       | 0       | 0       | 0.7                             |
|                                              | Avg. Net Demand Reduction<br>Per Square Foot (kW)   | 0       | 0       | 0       | 0                               |
|                                              |                                                     | 0       | 0       | 0       | 0                               |
|                                              | Total Gross Deemed Demand                           | U NI/A  |         | U       | U                               |
|                                              | Realization Rate                                    | N/A     | N/A     | N/A     | N/A                             |
|                                              | Adjusted Gross Demand                               | 0       | 0       | 0       | 0                               |
|                                              | Net to Gross Patio <sup>158</sup>                   | N/A     | N/A     | N/A     | N/A                             |
|                                              | Net-to-Gross Adjustment                             | 0       | 0       | 0       | 0                               |
|                                              | Net Adjusted Demand                                 | 0       | 0       | 0       | 0                               |
| Installed Winter<br>Demand Reduction<br>(kW) | Planned Demand (Net)                                | 381.8   | 381.8   | 381.8   | 1 1/5 3                         |
|                                              | Annual % Toward Planned<br>Demand (Net)             | 0%      | 0%      | 0%      | 0%                              |
|                                              | Avg. Peak Demand per<br>Participant (Gross)         | 0       | 0       | 0       | 0                               |
|                                              | Avg. Gross Demand Reduction<br>Per Square Foot (kW) | 0       | 0       | 0       | 0                               |
|                                              | Avg. Demand per Participant<br>(Net)                | 0       | 0       | 0       | 0                               |
|                                              | Avg. Net Demand Reduction<br>Per Square Foot (kW)   | 0       | 0       | 0       | 0                               |
|                                              |                                                     |         |         |         |                                 |
|                                              | \$Admin. per Participant<br>(Gross)                 | \$995   | \$757   | \$807   | \$807                           |
| Cumulative Annual                            | \$Admin. per kWh/year (Gross)                       | \$0     | \$0     | \$0     | \$0                             |
| Program                                      | \$Admin. per kW (Gross)                             | \$523   | \$669   | \$889   | \$889                           |
| Performance                                  | \$EM&V per Total Costs (\$)                         | 17.6%   | 16.2%   | 16.0%   | 16.0%                           |
|                                              | \$Rebate per Participant<br>(Gross)                 | \$1,833 | \$1,577 | \$1,506 | \$1,506                         |



#### 4.6.3.2 Key North Carolina program data

Table 4-19 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category         | Item                              | 2021     | 2022      | 2023      | Program total<br>(2020–2023) |
|------------------|-----------------------------------|----------|-----------|-----------|------------------------------|
| Operations       | Direct Rebate                     |          |           |           |                              |
| and              | Direct Implementation             |          |           |           |                              |
| Management       | Direct EM&V                       |          |           |           |                              |
| Costs (\$)       | Indirect Other (Administrative)   | \$917    | \$579     | \$961     | \$3,424                      |
|                  | Total <sup>160</sup>              | \$19,546 | \$13,856  | \$14,219  | \$66,425                     |
|                  | Planned                           | \$27,121 | \$28,370  | \$26,163  | \$109,933                    |
| Total Costs (\$) | Variance                          | -\$7,575 | -\$14,514 | -\$11,943 | -\$43,507                    |
|                  | Annual % of Planned               | 72%      | 49%       | 54%       | 60%                          |
|                  | Total (Gross)                     | 1        | 0         | 0         | 2                            |
| Participants     | Total Square Feet                 | 295      | 0         | 0         | 1,299                        |
|                  | Planned Square Feet (Gross)       | 8,037    | 8,037     | 8,037     | 32,148                       |
|                  | Variance                          | -7,742   | -8,037    | -8,037    | -30,849                      |
|                  | Annual % of Planned (Gross)       | 4%       | 0%        | 0%        | 4%                           |
|                  | Total Square Feet                 | 295      | 0         | 0         | 1,299                        |
|                  | North Facing                      | 0        | 0         | 0         | 254                          |
| Square Feet      | East Facing                       | 0        | 0         | 0         | 0                            |
|                  | West Facing                       | 0        | 0         | 0         | 0                            |
|                  | South Facing                      | 295      | 0         | 0         | 1,045                        |
|                  | Total Gross Deemed Savings        | 6        | 0         | 0         | 17,436                       |
| Installed        | Realization Rate                  | 100%     | N/A       | N/A       | 100%                         |
| Energy           | Realization Rate Adjustment       | 0        | 0         | 0         | 0                            |
| (kWh/vear)       | Adjusted Gross Savings            | 6        | 0         | 0         | 17,436                       |
|                  | Net-To-Gross Ratio <sup>161</sup> | 80%      | N/A       | N/A       | 80%                          |

| Table 1.10   | North Carolina | Non Posidential   | Window Film | program por | formanco | indicators | (2020 2022)159 |
|--------------|----------------|-------------------|-------------|-------------|----------|------------|----------------|
| 1 able 4-19. | North Carolina | i Non-Residentiai | WINDOW FIIM | program per | Iormance | indicators | (2020-2023)    |

<sup>&</sup>lt;sup>159</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>160</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>161</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), the



| Category  | Item                                                | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|-----------|-----------------------------------------------------|---------|---------|---------|------------------------------|
|           | Net-to-Gross Adjustment                             | -1      | 0       | 0       | -3,487                       |
|           | Net Adjusted Savings                                | 5       | 0       | 0       | 13,948                       |
|           | Planned Savings (Net)                               | 106,088 | 106,088 | 106,088 | 424,354                      |
|           | Annual % Toward Planned Savings<br>(Net)            | 0%      | 0%      | 0%      | 3.29%                        |
|           | Avg. Savings per Participant<br>(Gross)             | 6       | N/A     | N/A     | 8,718                        |
|           | Avg. Gross Savings Per Square<br>Foot (kWh/year)    | 0.02    | N/A     | N/A     | 13.4                         |
|           | Avg. Savings per Participant (Net)                  | 5       | N/A     | N/A     | 6,974                        |
|           | Avg. Net Savings Per Square Foot<br>(kWh/year)      | 0.02    | N/A     | N/A     | 10.7                         |
| 10        |                                                     |         |         |         |                              |
|           | Total Gross Deemed Demand                           | 0       | 0       | 0       | 4.7                          |
|           | Realization Rate                                    | N/A     | N/A     | N/A     | 100%                         |
| Installed | Realization Rate Adjustment                         | 0       | 0       | 0       | 0                            |
|           | Adjusted Gross Demand                               | 0       | 0       | 0       | 4.7                          |
|           | Net-To-Gross Ratio <sup>161</sup>                   | N/A     | N/A     | N/A     | 80%                          |
|           | Net-to-Gross Adjustment                             | 0       | 0       | 0       | -0.9                         |
|           | Net Adjusted Demand                                 | 0       | 0       | 0       | 3.7                          |
| Summer    | Planned Demand (Net)                                | 30.9    | 30.9    | 30.9    | 123.4                        |
| Reduction | Annual % Toward Planned<br>Demand (Net)             | 0%      | 0%      | 0%      | 3.02%                        |
| ()        | Avg. Peak Demand per Participant<br>(Gross)         | 0       | N/A     | N/A     | 2.3                          |
|           | Avg. Gross Demand Reduction Per<br>Square Foot (kW) | 0       | N/A     | N/A     | 0.004                        |
|           | Avg. Demand per Participant (Net)                   | 0       | N/A     | N/A     | 1.9                          |
|           | Avg. Net Demand Reduction Per<br>Square Foot (kW)   | 0       | N/A     | N/A     | 0.003                        |
|           |                                                     |         |         |         |                              |
|           | Total Gross Deemed Demand                           | 0       | 0       | 0       | 0                            |
| Installed | Realization Rate                                    | N/A     | N/A     | N/A     | N/A                          |
|           | Realization Rate Adjustment                         | 0       | 0       | 0       | 0                            |
| VVInter   | Adjusted Gross Demand                               | 0       | 0       | 0       | 0                            |
| Reduction | Net-To-Gross Ratio <sup>161</sup>                   | N/A     | N/A     | N/A     | N/A                          |
| (kW)      | Net-to-Gross Adjustment                             | 0       | 0       | 0       | 0                            |
|           | Net Adjusted Demand                                 | 0       | 0       | 0       | 0                            |
|           | Planned Demand (Net)                                | 24.4    | 24.4    | 24.4    | 73.1                         |

implementation vendor has calculated that 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-togross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category    | Item                                                | 2021  | 2022    | 2023    | Program total<br>(2020–2023) |
|-------------|-----------------------------------------------------|-------|---------|---------|------------------------------|
|             | Annual % Toward Planned<br>Demand (Net)             | 0%    | 0%      | 0%      | 0%                           |
|             | Avg. Peak Demand per Participant<br>(Gross)         | 0     | 0       | 0       | 0                            |
|             | Avg. Gross Demand Reduction Per<br>Square Foot (kW) | 0     | 0       | 0       | 0                            |
|             | Avg. Demand per Participant (Net)                   | 0     | 0       | 0       | 0                            |
|             | Avg. Net Demand Reduction Per<br>Square Foot (kW)   | 0     | 0       | 0       | 0                            |
|             |                                                     |       |         |         |                              |
|             | \$Admin. per Participant (Gross)                    | \$942 | \$1,232 | \$1,712 | \$1,712                      |
| Cumulative  | \$Admin. per kWh/year (Gross)                       | \$0   | \$0     | \$0     | \$0                          |
| Annual      | \$Admin. per kW (Gross)                             | \$405 | \$529   | \$736   | \$736                        |
| Performance | \$EM&V per Total Costs (\$)                         | 17.9% | 17.1%   | 16.9%   | 16.9%                        |
|             | \$Rebate per Participant (Gross)                    | \$650 | \$650   | \$650   | \$650                        |



#### 4.6.3.3 Additional Virginia program data

Figure 4-41 and Figure 4-42 show participation and gross annual energy savings by window orientation and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J. As expected, the installations facing east and south produced the highest savings. Over the life of this program, 2022 had the highest participation, but 2020 had the highest gross energy savings.<sup>162</sup>



Figure 4-41. Virginia Non-Residential Window Film Program participation by window orientation and year

<sup>&</sup>lt;sup>162</sup> Note that the participant counts in Figure 4-41 and Figure 4-42 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-18), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-42. Virginia Non-Residential Window Film Program gross annual energy savings (MWh/year) by window orientation and year





Figure 4-43 and Figure 4-44 show participation and gross annual energy savings by building type and year. Over the life of the program, participation is highest amongst offices less than 40,000 square feet, full service food service, and service types such as beauty, auto repair, and workshops. The highest savings were produced by offices greater than 40,000 square feet, lodging and dormitories, and outpatient healthcare.



Figure 4-43. Virginia Non-Residential Window Film Program participation by building type and year



Figure 4-44. Virginia Non-Residential Window Film Program gross annual energy savings (MWh/year) by building type and year





#### 4.6.3.4 Additional North Carolina program data

Figure 4-45 and Figure 4-46 show participation and gross annual energy savings by window orientation and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K. Two customers have participated in the window film program since its start in 2020. The building types were service and other. Window film was installed on the south- and north-facing windows.<sup>163</sup>

Figure 4-45. North Carolina Non-Residential Window Film Program participation by window orientation and year



<sup>&</sup>lt;sup>163</sup> Note that the participant counts in Figure 4-45 and Figure 4-46 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 4-19), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-46 shows that most of the savings resulted from the window film applied on the south-facing window.

Figure 4-46. North Carolina Non-Residential Window Film Program gross annual energy savings (MWh/year) by window orientation and year





# 4.7 Non-Residential Midstream Energy Efficiency Products – Virginia

# 4.7.1 Program description

The Non-Residential Midstream Energy Efficiency Products Program provides distributors or retailers with rebate incentives for the sale of eligible energy efficient equipment. To qualify for the program, distributors or retailers must operate in Dominion Energy's service territory in the Commonwealth of Virginia and provide Dominion with monthly point-ofsale data for the eligible equipment.

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched on January 15, 2021<sup>164</sup>



# Table 4-20. Measures offered through Non-Residential Midstream Energy Efficiency Products Program

| End use     | Measure                            |  |  |  |
|-------------|------------------------------------|--|--|--|
|             | Electric fryer                     |  |  |  |
|             | Hot food holding cabinet           |  |  |  |
| Commercial  | Griddle                            |  |  |  |
|             | Convection oven                    |  |  |  |
| ENERGY STAR | Electric combination oven          |  |  |  |
| Kitchen     | Steam cooker                       |  |  |  |
| Appliances  | Certified glass door               |  |  |  |
|             | Freezer certified solid door       |  |  |  |
|             | Refrigerator certified glass door  |  |  |  |
|             | Refrigerator certified solid door  |  |  |  |
|             | Packaged terminal air conditioner  |  |  |  |
| Efficient   | Unitary air-cooled air conditioner |  |  |  |
| Heating and | Unitary air-cooled heat pump       |  |  |  |
| Cooling     | Mini split heat pump               |  |  |  |
| Equipment   | Air-cooled chiller                 |  |  |  |
|             | Water-cooled chiller               |  |  |  |

# 4.7.2 Methods for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in

<sup>164</sup> Non-Residential Midstream Energy Efficiency Products Program Terms and Conditions



APPENDIX F. Table 4-21 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique work order identification numbers.

Table 4-21. Non-Residential Midstream Energy Efficiency Products Program initial planning assumptions

| Assumption                                                                 | Description               |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 14.86                     |
| Gross average annual energy savings (kWh/year) per participant             | 14,201                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 9.47                      |
| Gross average winter coincident peak demand reduction (kW) per participant | 1.24                      |
| Net average annual energy savings (kWh/year) per participant               | 12,781                    |
| Net average summer coincident peak demand reduction (kW) per participant   | 8.52                      |
| Net average winter coincident peak demand reduction (kW) per participant   | 1                         |
| Average rebate (\$US) per participant                                      | \$4,494                   |

## 4.7.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.7.3.1 Key Virginia program data

Table 4-22 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 4-22. Virginia Non-Residential Midstream Energy Efficiency Products Program performance indicators (2020– 2023)<sup>165</sup>

| Item                            | 2021                                                                                 | 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2023                                                                                                     | Program<br>total<br>(2020–2023)                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Direct Rebate                   |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                          |                                                                                                                      |
| Direct Implementation           |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                          |                                                                                                                      |
| Direct EM&V                     |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                          |                                                                                                                      |
| Indirect Other (Administrative) | \$22,914                                                                             | \$35,285                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | \$48,463                                                                                                 | \$108,631                                                                                                            |
|                                 | Item Direct Rebate Direct Implementation Direct EM&V Indirect Other (Administrative) | Item2021Direct RebateImage: Constraint of the second se | Item20212022Direct RebateDirect ImplementationDirect EM&VIndirect Other (Administrative)\$22,914\$35,285 | Item202120222023Direct RebateDirect ImplementationDirect EM&VIndirect Other (Administrative)\$22,914\$35,285\$48,463 |

<sup>&</sup>lt;sup>165</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                                     | Item                                    | 2021         | 2022         | 2023         | Program<br>total<br>(2020–2023) |
|----------------------------------------------|-----------------------------------------|--------------|--------------|--------------|---------------------------------|
|                                              | Total <sup>166</sup>                    | \$488,674    | \$845,079    | \$717,250    | \$2,097,148                     |
| Total Costs (\$)                             | Planned                                 | \$1,916,471  | \$1,878,007  | \$1,870,924  | \$5,665,402                     |
|                                              | Variance                                | -\$1,427,798 | -\$1,032,928 | -\$1,153,674 | -\$3,568,254                    |
|                                              | Annual % of Planned                     | 25%          | 45%          | 38%          | 37%                             |
|                                              | Total (Gross)                           | 7            | 113          | 83           | 203                             |
| Participants                                 | Planned (Gross)                         | 300          | 300          | 300          | 900                             |
| Participants                                 | Variance                                | -293         | -187         | -217         | -697                            |
|                                              | Annual % of Planned (Gross)             | 2%           | 38%          | 28%          | 23%                             |
|                                              | Total Cross Deemed Souings              | 65 116       | 1 604 707    | 2 220 202    | 2 010 206                       |
|                                              | Poolization Pote                        | 100%         | 1,024,787    | 2,220,392    | 3,910,290                       |
|                                              | Realization Rate                        | 100%         | 100%         | 100%         | 100%                            |
|                                              | Adjusted Gross Savings                  | 65 116       | 1 624 787    | 2 220 392    | 3 910 296                       |
|                                              | Net-to-Gross Batio                      | 90%          | 90%          | 2,220,392    | 0,910,290                       |
| Installed Energy<br>Savings<br>(kWh/year)    | Net-to-Gross Adjustment                 | -6.512       | -162 479     | -222 039     | -391 030                        |
|                                              | Net Adjusted Savings                    | 58 605       | 1 462 308    | 1 998 353    | 3 519 266                       |
|                                              | Planned Savings (Net)                   | 3 834 268    | 3 834 268    | 3 834 268    | 11 502 805                      |
|                                              | Annual % Toward Planned Savings (Net)   | 2%           | 38%          | 52%          | 31%                             |
|                                              | Avg. Savings per Participant (Gross)    | 9 302        | 14 379       | 26 752       | 19 263                          |
|                                              | Avg. Savings per Participant (Net)      | 8,372        | 12,941       | 24,077       | 17,336                          |
|                                              |                                         |              | 4 057        | 000          | 0.050                           |
|                                              | Total Gross Deemed Demand               | 81           | 1,957        | 620          | 2,659                           |
|                                              |                                         | 100%         | 100%         | 100%         | 100%                            |
|                                              | Realization Rate Adjustment             | 0            | 0            | 0            | 0                               |
|                                              | Adjusted Gross Demand                   | 81           | 1,957        | 620          | 2,659                           |
| Installed Summer<br>Demand<br>Reduction (KW) | Net-to-Gross Ratio                      | 90%          | 90%          | 90%          | 90%                             |
|                                              | Net-to-Gross Adjustment                 | -8           | -196         | -62          | -266                            |
| neudotion (nu)                               | Net Adjusted Demand                     | 73           | 1,762        | 558          | 2,393                           |
|                                              | Planned Demand (Net)                    | 2,556        | 2,556        | 2,556        | 7,667                           |
|                                              | Annual % Toward Planned Reduction (Net) | 3%           | 69%          | 22%          | 31%                             |
|                                              | Avg. Demand per Participant (Gross)     | 12           | 17           | 1            | 13                              |
|                                              | Avg. Demand per Participant (Net)       | 10           | 16           | 7            | 12                              |
| Installed Winter                             | Total Gross Deemed Demand               | 11           | 74           | 303          | 388                             |
| Demand                                       | Realization Rate                        | 100%         | 100%         | 100%         | 100%                            |

<sup>&</sup>lt;sup>166</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category       | Item                                    | 2021    | 2022    | 2023    | Program<br>total<br>(2020–2023) |
|----------------|-----------------------------------------|---------|---------|---------|---------------------------------|
| Reduction (kW) | Realization Rate Adjustment             | 0       | 0       | 0       | 0                               |
|                | Adjusted Gross Demand                   | 11      | 74      | 303     | 388                             |
|                | Net-to-Gross Ratio                      | 90%     | 90%     | 90%     | 90%                             |
|                | Net-to-Gross Adjustment                 | -1      | -7      | -30     | -39                             |
|                | Net Adjusted Demand                     | 10      | 67      | 273     | 350                             |
|                | Planned Demand (Net)                    | 335     | 335     | 335     | 1,004                           |
|                | Annual % Toward Planned Reduction (Net) | 3%      | 20%     | 82%     | 35%                             |
|                | Avg. Demand per Participant (Gross)     | 2       | 1       | 4       | 2                               |
|                | Avg. Demand per Participant (Net)       | 1       | 1       | 3       | 2                               |
|                | \$Admin. per Participant (Gross)        | \$3,555 | \$501   | \$535   | \$535                           |
| Cumulative     | \$Admin. per kWh/year (Gross)           | \$0     | \$0.04  | \$0.03  | \$0.03                          |
| Annual Program | \$Admin. per kW (Gross)                 | \$306   | \$30    | \$41    | \$41                            |
| Performance    | \$EM&V per Total Costs (\$)             | 30.4%   | 22.5%   | 20.2%   | 20.2%                           |
|                | \$Rebate per Participant (Gross)        | \$1,380 | \$3,417 | \$3,363 | \$3,363                         |

## 4.7.3.2 Additional Virginia program data

Figure 4-47 and Figure 4-48 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Program energy savings increased from 2022 levels representing a 38% increase (Table 4-22). Participation values in this program is the number of unique work orders having discounted measures. Work orders can include more than one quantity of a specific measure so the numbers in Figure 4-47 do not represent the number of discounted measures sold through the program. In 2023, the program provided rebates for discounted measures in 83 work orders (Figure 4-47). Slightly more than two-thirds of work orders included discounted commercial freezers or refrigerators (56). The next most frequent measures were unitary air conditioners, hot food holding cabinets, and convection ovens.

A decrease in the number of work orders does not necessarily show that fewer measures were discounted through the program. Although the total number of work orders decreased from 113 in 2022 to 83 in 2023, the total number of measures increased from 614 in 2022 to 1,593 in 2023. This divergence between decreasing work orders and increasing measures occurred most notably in commercial freezers and refrigerators. The number of work orders that included commercial freezers and refrigerators fell from 96 in 2022 to 56 in 2023, but the number of discounted commercial freezers and refrigerators increased from 552 in 2022 to 1,323 in 2023.



Figure 4-47. Virginia Non-Residential Midstream Energy Efficiency Products Program participation by measure and year



Measure



In 2023, the program achieved gross annual energy savings of 2,220 MWh/year. One-third of the savings were from watercooled chillers. The next largest savings measures were commercial freezers and refrigerators which represented 22% of 2023 savings, air-source heat pumps which made up 10%, and hot food holding cabinets which made up 9% percent of savings. Although savings from air cooled and water-cooled chillers decreased from 2022 to 2023, this was more than offset by increases in savings from the other heating and cooling equipment and kitchen appliances.







# 4.8 Non-Residential Multifamily – Virginia

#### 4.8.1 Program description

The Multifamily Program is available in Virginia and provides property owners and managers with an on-site energy assessment of both common areas and tenant units. Following the assessment, participants receive a report detailing energy-saving improvements for individual units and common areas.

The program contains both residential and non-residential components. Measures and indicators for the residential component are reported in Section 2.9. Measures in the non-residential component described here were installed in common areas.

Table 4-23 lists the energy-efficient measures eligible for the nonresidential component of this program.



Table 4-23. Measures offered through Non-Residential Multifamily Program

| End use        | Measure                                               |
|----------------|-------------------------------------------------------|
|                | Water heater pipe insulation                          |
|                | Water heater temperature turndown                     |
|                | Fixed showerhead                                      |
|                | Handheld showerhead                                   |
|                | Kitchen swivel aerator                                |
|                | Bathroom aerator                                      |
|                | Decorative LED lamps                                  |
| Lighting       | LED globe lamps                                       |
|                | LED downlight lamps                                   |
| Defrigeration  | Refrigerator coil brush                               |
| Reingeration   | Refrigerator thermometer                              |
|                | Heat pump system and/or central AC tune-up            |
|                | Packaged terminal heat pump and/or central AC upgrade |
|                | Smart thermostat on heat pump and/or central AC       |
| Major Measures | Air sealing                                           |
|                | Duct sealing                                          |
|                | Attic insulation                                      |
|                | Wall insulation                                       |
|                | Refrigerator                                          |
| ENERGY STAR    | Room or wall AC unit                                  |
| Appliances     | Clothes washer                                        |
|                | Clothes dryer                                         |

The Virginia SCC approved this Program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched on January 15, 2021.<sup>167</sup>

<sup>167</sup> Non-Residential Multifamily Program Terms and Conditions



# 4.8.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-24 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Assumption                                                   | Value             |
|--------------------------------------------------------------|-------------------|
| Target market                                                | Property managers |
| NTG factor                                                   | 90%               |
| Measure life (years)                                         | 9.11              |
| Gross average annual savings per participant (kWh/year)      | 1,902             |
| Gross average summer demand reduction per participant (kW)   | 0.31              |
| Gross average winter demand reduction per participant (kW)   | 0.22              |
| Net average annual energy savings per participant (kWh/year) | 1,710             |
| Net average summer demand reduction per participant (kW)     | 0.28              |
| Net average winter demand reduction per participant (kW)     | 0.20              |
| Average rebate per participant (\$US)                        | \$164             |

#### Table 4-24. Non-Residential Multifamily Housing Program planning assumptions

## 4.8.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.8.3.1 Key Virginia program data

Table 4-25 provides performance indicator data from 2020 through 2023, in Virgina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

The program achieved a fivefold increase in participation from 2022 to 2023 but reached only a portion of the planned participation levels. According to the program's Manager, the program has built a pipeline of interested customers and expects the program to increase participation in 2024.


| Category                      | Item                                  | 2021       | 2022       | 2023       | Program total<br>(2020–2023) |
|-------------------------------|---------------------------------------|------------|------------|------------|------------------------------|
| Operations                    | Direct Rebate                         |            |            |            |                              |
| and                           | Direct Implementation                 |            |            |            |                              |
| Management                    | Direct EM&V                           |            |            |            |                              |
| Costs (\$)                    | Indirect Other (Administrative)       | \$9,453    | \$7,265    | \$20,987   | \$38,918                     |
|                               | Total <sup>169</sup>                  | \$201,595  | \$173,987  | \$310,611  | \$714,624                    |
| Total Costs                   | Planned                               | \$394,826  | \$504,682  | \$488,523  | \$1,388,032                  |
| (\$)                          | Variance                              | -\$193,231 | -\$330,695 | -\$177,912 | -\$673,408                   |
|                               | Annual % of Planned                   | 51%        | 34%        | 64%        | 51%                          |
|                               | Total (Gross)                         |            | 5          | 20         | 3/                           |
|                               | Planned (Gross)                       | 1 100      | 1 725      | 1 725      | 4 550                        |
| Participants                  | Variance                              | -1 100     | -1 720     | -1 696     | -4 516                       |
|                               | Annual % of Planned (Gross)           | 0%         | 0%         | 2%         | 1%                           |
|                               |                                       |            |            |            |                              |
|                               | Total Gross Deemed Savings            | 0          | 165,606    | 211,734    | 377,340                      |
|                               | Realization Rate                      | N/A        | 100%       | 100%       | 100%                         |
|                               | Realization Rate Adjustment           | 0          | 0          | 0          | 0                            |
|                               | Adjusted Gross Savings                | 0          | 165,606    | 211,734    | 377,340                      |
| Installed                     | Net-to-Gross Ratio <sup>170</sup>     | N/A        | 90%        | 90%        | 90%                          |
| Energy                        | Net-to-Gross Adjustment               | 0          | -16,561    | -21,173    | -37,734                      |
| (kWh/year)                    | Net Adjusted Savings                  | 0          | 149,045    | 190,561    | 339,606                      |
|                               | Planned Savings (Net)                 | 1,881,505  | 2,950,541  | 2,950,541  | 7,782,587                    |
|                               | Annual % Toward Planned Savings (Net) | 0%         | 5%         | 6%         | 4%                           |
|                               | Avg. Savings per Participant (Gross)  | N/A        | 33,121     | 7,301      | 11,098                       |
|                               | Avg. Savings per Participant (Net)    | N/A        | 29,809     | 6,571      | 9,988                        |
|                               |                                       |            |            |            |                              |
| hard all and                  | Total Gross Deemed Demand             | 0          | 18         | 41         | 22                           |
| Installed                     | Realization Rate                      | N/A        | 100%       | 100%       | 100%                         |
| Summer<br>Demand<br>Reduction | Realization Rate Adjustment           | 0          | 0          | 0          | 0                            |
|                               | Adjusted Gross Demand                 | 0          | 18         | 41         | 22                           |
| (kW)                          | Net-to-Gross Ratio <sup>170</sup>     | N/A        | 90%        | 90%        | 90%                          |
|                               | Net-to-Gross Adjustment               | 0          | -1.8       | -0.4       | -2.2                         |

#### Table 4-25. Virginia Non-Residential Multifamily Housing Program performance indicators (2020–2023)<sup>168</sup>

<sup>&</sup>lt;sup>168</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>169</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include Dominion Energy's margins.

<sup>&</sup>lt;sup>170</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 98% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



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| Category                                   | Item                                    | 2021  | 2022    | 2023    | Program total<br>(2020–2023) |
|--------------------------------------------|-----------------------------------------|-------|---------|---------|------------------------------|
|                                            | Net Adjusted Demand                     | 0     | 16      | 4       | 20                           |
|                                            | Planned Demand (Net)                    | 303   | 475     | 475     | 1,253                        |
|                                            | Annual % Toward Planned Reduction (Net) | 0%    | 3.46%   | 0.78%   | 1.61%                        |
|                                            | Avg. Demand per Participant (Gross)     | N/A   | 3.6     | 0.1     | 0.7                          |
|                                            | Avg. Demand per Participant (Net)       | N/A   | 3.3     | 0.1     | 0.6                          |
|                                            | Total Gross Deemed Demand               | 0     | 18      | 7       | 25                           |
|                                            | Realization Rate                        | N/A   | 100%    | 100%    | 100%                         |
| Installed<br>Winter<br>Demand<br>Reduction | Realization Rate Adjustment             | 0     | 0       | 0       | 0                            |
|                                            | Adjusted Gross Demand                   | 0     | 18      | 7       | 25                           |
|                                            | Net-to-Gross Ratio <sup>170</sup>       | N/A   | 90%     | 90%     | 90%                          |
|                                            | Net-to-Gross Adjustment                 | 0     | -1.8    | -0.7    | -2.5                         |
|                                            | Net Adjusted Demand                     | 0     | 17      | 6       | 23                           |
| (KVV)                                      | Planned Demand (Net)                    | 218   | 342     | 342     | 901                          |
|                                            | Annual % Toward Planned Reduction (Net) | 0%    | 4.82%   | 1.84%   | 2.52%                        |
|                                            | Avg. Demand per Participant (Gross)     | N/A   | 3.7     | 0.2     | 0.7                          |
|                                            | Avg. Demand per Participant (Net)       | N/A   | 3.3     | 0.2     | 0.7                          |
| and successful                             | \$Admin. per Participant (Gross)        | N/A   | \$3,586 | \$1,145 | \$1,145                      |
| Cumulative                                 | \$Admin. per kWh/vear (Gross)           | N/A   | \$0     | \$0     | \$0                          |
| Program                                    | \$Admin. per kW (Gross)                 | N/A   | \$983   | \$1,739 | \$1,739                      |
| Performance                                | \$EM&V per Total Costs (\$)             | 39.7% | 40.1%   | 31.3%   | 31.3%                        |
|                                            | \$Rebate per Participant (Gross)        | N/A   | \$671   | \$4,075 | \$4,075                      |



#### 4.8.3.2 Additional Virginia program data

Figure 4-49 and Figure 4-50 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J. Figure 4-49 shows that LED lamps were installed by 28 out of 29 participants in 2023. These lighting measures included exist signs installed in stairwells. One participant installed occupancy sensors.<sup>171</sup>



Figure 4-49. Non-Residential Multifamily Housing Program participation by measure and year

<sup>&</sup>lt;sup>171</sup> Note that the participant counts in Figure 4-49 and Figure 4-50 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-25), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-50 shows that the LED lamps accounted for 93% of the 2023 savings.

Figure 4-50. Virginia Non-Residential Multifamily Housing Program gross annual energy savings by measure and year (MWh/year)





# 4.9 Non-Residential New Construction – Virginia and North Carolina

# 4.9.1 Program description

The Non-Residential New Construction Program offers design recommendations and rebates to qualifying facility owners for installing energy-efficient measures. The program applies to non-residential customers for new construction or extensive renovation projects. Some of the measures offered include:

| End use   | Measure                            |  |
|-----------|------------------------------------|--|
| Linkting  | High performance interior lighting |  |
| Lighting  | LED exterior lighting              |  |
|           | Chillers and chiller controls      |  |
|           | Air-source heat pumps              |  |
| HVAC      | Other cooling equipment            |  |
|           | HVAC system controls               |  |
|           | Demand controlled ventilation      |  |
| Plug Load | Plug load management systems       |  |

This program is implemented through program representatives. The customer's design team or contractor will work with program representatives to determine the best energy efficiency options for consideration. The contractor or design firm applies to Dominion Energy for qualification of installed energy efficiency measures. Measure savings are estimated based on energy modeling. Sites are inspected to verify the installed measures and other project details.

All Dominion Energy non-residential customers are eligible to participate except those who are exempt by statute, special contract, or have opted out of DSM programs. Customers are not counted as program participants until a completed rebate

application form is processed, and a rebate is issued. The rebate application process may take several months, as customers have 45 days to submit their rebate application and it may take up to 90 days to process the rebate due to the verification process.

The Virginia SCC approved this Phase VIII program on July 30, 2020 (PUR-2019-00201). The program officially launched in Virginia on January 15, 2021.<sup>172</sup> The North Carolina Utilities Commission approved the program on February 9, 2021 (Docket No. E-22 Sub 591) and it officially launched on April 15, 2021.<sup>173</sup>



While the program was open to enrollment in 2022, 2023 was the first year that participants and projects were finalized and reported. This lag is due to the time between the design, construction, and inspection stage as savings are claimed upon final inspection. There are an increasing number of projects in the current pipeline from small retailers, wholesale stores, gas stations and apartment complexes.

<sup>172</sup>ª Non-Residential New Construction Program Terms and Conditions-Virginia.

<sup>173&</sup>quot; Non-Residential New Construction Program Terms and Conditions-North Carolina.



# 4.9.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-266 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Table 4-26. No | on-Residential New | <b>Construction Program</b> | n (Phase VII) planni | ng assumptions |
|----------------|--------------------|-----------------------------|----------------------|----------------|
|----------------|--------------------|-----------------------------|----------------------|----------------|

| Assumption                                                                 | Description               |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 20                        |
| Gross average annual energy savings per participant (kWh/year)             | 54,259                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 14.49                     |
| Gross average winter coincident peak demand reduction (kW) per participant | 16.37                     |
| Net average annual energy savings per participant (kWh/year)               | 48,833                    |
| Net average summer coincident peak demand reduction (kW) per Participant   | 13.04                     |
| Net average winter coincident peak demand reduction (kW) per Participant   | 14.74                     |
| Average rebate (\$US) per participant                                      | \$18,754                  |

# 4.9.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.9.3.1 Key Virginia program data

Table 4-27 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 4-27. Virginia Non-Residential New Construction Program performance indicators (2020–2023)<sup>174</sup>

| Category         | Item                            | 2021      | 2022      | 2023        | Program total<br>(2020–2023) |
|------------------|---------------------------------|-----------|-----------|-------------|------------------------------|
| Operations       | Direct Rebate                   |           |           |             |                              |
| and              | Direct Implementation           |           |           |             |                              |
| Management       | Direct EM&V                     |           |           |             |                              |
| Costs (\$)       | Indirect Other (Administrative) | \$28,316  | \$19,946  | \$151,450   | \$200,891                    |
| Total Costs (\$) | Total <sup>175</sup>            | \$603,899 | \$477,704 | \$2,241,471 | \$3,350,697                  |

<sup>&</sup>lt;sup>174</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>175</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                      | Item                                    | 2021        | 2022        | 2023        | Program total<br>(2020–2023) |
|-------------------------------|-----------------------------------------|-------------|-------------|-------------|------------------------------|
|                               | Planned                                 | \$1,139,214 | \$1,153,721 | \$2,857,669 | \$5,150,605                  |
|                               | Variance                                | -\$535,315  | -\$676,017  | -\$616,198  | -\$1,799,907                 |
|                               | Annual % of Planned                     | 53%         | 41%         | 78%         | 65%                          |
|                               | Total (Gross)                           | 0           | 0           | 8           | 8                            |
|                               | Planned (Gross)                         | 19          | 47          | 94          | 160                          |
| Participants                  | Variance                                | -19         | -47         | -86         | -152                         |
|                               | Annual % of Planned (Gross)             | 0%          | 0%          | 9%          | 5%                           |
|                               | Total Gross Deemed Savings              | 0           | 0           | 28,749,726  | 28,749,726                   |
|                               | Realization Rate                        | N/A         | N/A         | 100%        | 100%                         |
|                               | Realization Rate Adjustment             | 0           | 0           | 0           | 0                            |
|                               | Adjusted Gross Savings                  | 0           | 0           | 28,749,726  | 28,749,726                   |
| Installed                     | Net-to-Gross Ratio <sup>176</sup>       | N/A         | N/A         | 90%         | 90%                          |
| Energy                        | Net-to-Gross Adjustment                 | 0           | 0           | -2,874,973  | -2,874,973                   |
| (kWh/year)                    | Net Adjusted Savings                    | 0           | 0           | 25,874,754  | 25,874,754                   |
| (kwii/year)                   | Planned Savings (Net)                   | 927,828     | 2,295,154   | 4,590,309   | 7,813,292                    |
|                               | Annual % Toward Planned Savings (Net)   | 0%          | 0%          | 563.7%      | 331.2%                       |
|                               | Avg. Savings per Participant (Gross)    | N/A         | N/A         | 3,593,716   | 3,593,716                    |
|                               | Avg. Savings per Participant (Net)      | N/A         | N/A         | 3,234,344   | 3,234,344                    |
|                               | Total Gross Deemed Demand               | 0           | 0           | 3,216.2     | 3,216.2                      |
|                               | Realization Rate                        | N/A         | N/A         | 100%        | 100%                         |
|                               | Realization Rate Adjustment             | 0           | 0           | 0           | 0                            |
| Installed                     | Adjusted Gross Demand                   | 0           | 0           | 3,216.2     | 3,216.2                      |
| Summer                        | Net-to-Gross Ratio                      | N/A         | N/A         | 90%         | 90%                          |
| Demand                        | Net-to-Gross Adjustment                 | 0           | 0           | -321.6      | -321.6                       |
| Reduction                     | Net Adjusted Demand                     | 0           | 0           | 2,894.6     | 2,894.6                      |
| (KVV)                         | Planned Demand (Net)                    | 247.8       | 612.9       | 1,225.8     | 2,086.4                      |
|                               | Annual % Toward Planned Reduction (Net) | 0%          | 0%          | 236.1%      | 138.7%                       |
|                               | Avg. Demand per Participant (Gross)     | N/A         | N/A         | 402.0       | 402.0                        |
|                               | Avg. Demand per Participant (Net)       | N/A         | N/A         | 361.8       | 361.8                        |
| Installed                     | Total Gross Deemed Demand               | 0           | 0           | 3,611.1     | 3.611.1                      |
| Installed<br>Winter<br>Demand | Realization Rate                        | N/A         | N/A         | 100%        | 100%                         |
|                               | Realization Rate Adjustment             | 0           | 0           | 0           | 0                            |
| Reduction                     | Adjusted Gross Demand                   | 0           | 0           | 3,611.1     | 3,611.1                      |
| (kW)                          | Net-to-Gross Ratio                      | N/A         | N/A         | 90%         | 90%                          |

<sup>&</sup>lt;sup>176</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category                                       | Item                                    | 2021  | 2022  | 2023      | Program total<br>(2020–2023) |
|------------------------------------------------|-----------------------------------------|-------|-------|-----------|------------------------------|
|                                                | Net-to-Gross Adjustment                 | 0     | 0     | -361.1    | -361.1                       |
| Net Adjusted Demand                            |                                         | 0     | 0     | 3,250.0   | 3,250.0                      |
|                                                | Planned Demand (Net)                    | 280.0 | 692.7 | 1,385.3   | 2,358.0                      |
|                                                | Annual % Toward Planned Reduction (Net) | 0%    | 0%    | 234.6%    | 137.8%                       |
|                                                | Avg. Demand per Participant (Gross)     | N/A   | N/A   | 451.4     | 451.4                        |
|                                                | Avg. Demand per Participant (Net)       | N/A   | N/A   | 406.2     | 406.2                        |
|                                                | \$Admin. per Participant (Gross)        | N/A   | N/A   | \$25,111  | \$25,111                     |
| Cumulative<br>Annual<br>Program<br>Performance | \$Admin. per kWh/year (Gross)           | N/A   | N/A   | \$0.01    | \$0.01                       |
|                                                | \$Admin. per kW (Gross)                 | N/A   | N/A   | \$62      | \$62                         |
|                                                | \$EM&V per Total Costs (\$)             | 12%   | 9%    | 5%        | 5%                           |
|                                                | \$Rebate per Participant (Gross)        | N/A   | N/A   | \$178,832 | \$178,832                    |

#### 4.9.3.2 Key North Carolina program data

Table 4-28 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 4-28. North Carolina Non-Residential New Construction Program performance indicators (2021–2023)

| Category                                   | Item                            | 2021      | 2022      | 2023       | Program total<br>(2021–2023) |
|--------------------------------------------|---------------------------------|-----------|-----------|------------|------------------------------|
|                                            | Direct Rebate                   |           |           |            |                              |
| Operations and<br>Management<br>Costs (\$) | Direct Implementation           |           |           |            |                              |
|                                            | Direct EM&V                     |           |           |            |                              |
|                                            | Indirect Other (Administrative) | \$1,270   | \$1,293   | \$3,468    | \$6,031                      |
|                                            | Total <sup>177</sup>            | \$27,089  | \$30,963  | \$51,331   | \$109,383                    |
| Total Costs (\$)                           | Planned                         | \$70,887  | \$73,614  | \$175,554  | \$320,055                    |
|                                            | Variance                        | -\$43,798 | -\$42,651 | -\$124,223 | -\$210,672                   |
|                                            | Annual % of Planned             | 38%       | 42%       | 29%        | 34%                          |
|                                            | Total (Gross)                   | 0         | 0         | 1          | 1                            |
| Participants                               | Planned (Gross)                 | 1         | 3         | 6          | 10                           |
|                                            | Variance                        | -1        | -3        | -5         | -9                           |
|                                            | Annual % of Planned (Gross)     | 0%        | 0%        | 17%        | 10%                          |
| Installed                                  | Total Gross Deemed Savings      | 0         | 0         | 43,829     | 43,829                       |

<sup>&</sup>lt;sup>177</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                           | Item                                    | 2021   | 2022    | 2023    | Program total<br>(2021–2023) |
|------------------------------------|-----------------------------------------|--------|---------|---------|------------------------------|
| Energy Savings                     | Realization Rate                        | N/A    | N/A     | 100%    | 100%                         |
| (kWh/year)                         | Realization Rate Adjustment (100%)      | 0      | 0       | 0       | 0                            |
|                                    | Adjusted Gross Savings                  | 0      | 0       | 43,829  | 43,829                       |
|                                    | Net-to-Gross Ratio <sup>178</sup>       | N/A    | N/A     | 90%     | 90%                          |
|                                    | Net-to-Gross Adjustment                 | 0      | 0       | -4,383  | -4,383                       |
|                                    | Net Adjusted Savings                    | 0      | 0       | 39,446  | 39,446                       |
|                                    | Planned Savings (Net)                   | 48,833 | 146,499 | 292,998 | 488,331                      |
|                                    | Annual % Toward Planned Savings (Net)   | 0%     | 0%      | 13.5%   | 8.08%                        |
|                                    | Avg. Savings per Participant (Gross)    | N/A    | N/A     | 43,829  | 43,829                       |
|                                    | Avg. Savings per Participant (Net)      | N/A    | N/A     | 39,446  | 39,446                       |
|                                    | Total Gross Deemed Demand               | 0      | 0       | 81      | 81                           |
|                                    | Realization Rate                        | N/A    | N/A     | 100%    | 100%                         |
|                                    | Realization Rate Adjustment             | 0      | 0       | 0       | 0                            |
|                                    | Adjusted Gross Demand                   | 0      | 0       | 8.1     | 8.1                          |
| Installed                          | Net-to-Gross Ratio                      | N/A    | N/A     | 90%     | 90%                          |
| Summer<br>Demand<br>Reduction (kW) | Net-to-Gross Adjustment                 | 0      | 0       | -0.8    | -0.8                         |
|                                    | Net Adjusted Demand                     | 0      | 0       | 7.3     | 7.3                          |
|                                    | Planned Demand (Net)                    | 13.0   | 39.1    | 78.2    | 130.4                        |
|                                    | Annual % Toward Planned Reduction (Net) | 0%     | 0%      | 9.29%   | 5.58%                        |
|                                    | Avg. Demand per Participant (Gross)     | N/A    | N/A     | 8.1     | 8.1                          |
|                                    | Avg. Demand per Participant (Net)       | N/A    | N/A     | 7.3     | 7.3                          |
|                                    | Total Grass Desmad Demand               | 0      | 0       | 60      | 6.0                          |
|                                    | Profilestics Defined Demand             |        |         | 0.0     | 0.0                          |
|                                    | Realization Rate                        | N/A    | N/A     | 100%    | 100%                         |
|                                    | Realization Rate Adjustment             | 0      | 0       | 0       | 0                            |
|                                    | Adjusted Gross Demand                   | 0      | 0       | 6.8     | 6.8                          |
| Installed Winter                   | Net-to-Gross Ratio                      | N/A    | N/A     | 90%     | 90%                          |
| Reduction (kW)                     | Net-to-Gross Adjustment                 | 0      | 0       | -0.7    | -0.7                         |
|                                    | Net Adjusted Demand                     | 0      | 110     | 6.1     | 6.1                          |
|                                    | Planned Demand (Net)                    | 14.7   | 44.2    | 88.4    | 147.4                        |
|                                    | Annual % Toward Planned Reduction (Net) | 0%     | 0%      | 6.9%    | 4.1%                         |
|                                    | Avg. Demand per Participant (Gross)     | N/A    | N/A     | 6.8     | 6.8                          |
|                                    | Avg. Demand per Participant (Net)       | N/A    | N/A     | 6.1     | 6.1                          |
| Cumulative                         | \$Admin. per Participant (Gross)        | N/A    | N/A     | \$6,031 | \$6,031                      |

<sup>&</sup>lt;sup>178</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category    | Item                             | 2021 | 2022 | 2023    | Program total<br>(2021–2023) |
|-------------|----------------------------------|------|------|---------|------------------------------|
| Annual      | \$Admin. per kWh/year (Gross)    | N/A  | N/A  | \$0     | \$0                          |
| Program     | \$Admin. per kW (Gross)          | N/A  | N/A  | \$746   | \$746                        |
| Performance | \$EM&V per Total Costs (\$)      | 5%   | 4%   | 6%      | 6%                           |
|             | \$Rebate per Participant (Gross) | N/A  | N/A  | \$5,289 | \$5,289                      |

#### 4.9.3.3 Additional Virginia program data

Figure 4-51 and Figure 4-52 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J. Seven measure types were installed in 2023. Overall, the chiller controls measure produced the highest gross annual energy savings.<sup>179</sup>

<sup>&</sup>lt;sup>179</sup> Note that the participant counts in Figure 4-51 and Figure 4-52 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-27), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



#### Figure 4-51. Virginia Non-Residential New Construction Program participation by measure and year





Figure 4-52. Virginia Non-Residential New Construction Program gross annual energy savings (MWh/year) by measure and year





Figure 4-53 and Figure 4-54 show participation and gross annual energy savings by building type and year.

In 2023, participation was highest from food service (fast food), although it did not produce the highest savings. The most savings were produced by a data center, classified as other.







Figure 4-54. Virginia Non-Residential New Construction Program gross annual energy savings (MWh/year) by building type and year





#### 4.9.3.4 Additional North Carolina program data

There was one participant in North Carolina. Figure 4-55 shows gross annual energy savings by measure. Interior and exterior lighting retrofits contributed to most of the savings.

Figure 4-55. North Carolina Non-Residential New Construction Program gross annual energy savings (MWh/year) by measure and year





# 4.10 Non-Residential Small Business Improvement Enhanced – Virginia and North Carolina

#### 4.10.1 Program description

The Non-Residential Small Business Improvement Enhanced Program is the next iteration of the DSM Phase V Non-Residential Small Business Improvement Program. It offers non-residential small businesses the opportunity to receive an on-site energy assessment, or audit, by a participating contractor in Dominion Energy's Small Business contractor network. Eligible participants are nonresidential customers with privately-owned businesses in five or fewer locations who have not exceeded the monthly demand of 100 kilowatts more than three times in the past 12 months. The customer



must be responsible for the electric bill and must be the owner of the facility or reasonably able to secure permission to complete the measures.

After an energy assessment, the customer receives a personalized report showing the projected energy and cost savings anticipated from the implementation of energy efficiency measure options identified during the audit. Once a qualifying customer provides documentation that at least one of the recommended energy efficiency improvements has been made, a portion of the audit value is refunded based on the measures installed.

Since the program is implemented through a contractor network, customers must contact a participating contractor to receive the energy audit. Customers are not considered participants until a completed application form is processed and a rebate issued. Work must be completed within six months of the audit to qualify for a rebate.

The program measures are primarily energy efficiency measures designed to decrease energy consumption through the replacement of less efficient equipment, installation of new equipment that exceeds current code efficiency standards or recommissioning of existing equipment. Measures eligible to receive a rebate through the program are shown in Table 4-29.

The Virginia State Corporation Commission (SCC) approved this program, as part of the DSM Phase VIII programs, on July 30, 2020 (Case No. PUR-2019-00201) for a five-year period. The program officially launched on January 15, 2021.<sup>180</sup> The North Carolina Utilities Commission approved this program on February 9, 2021 (Docket No. E-22, SUB 596). The program officially launched on April 15, 2021.<sup>181</sup> Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. The program continued both conventional (bill inserts, brochures, trade shows, etc.) and web-based marketing (pop-up ads, Manage Your Account platform, etc.). Additionally, a new in-person direct marketing method targeting local stores was implemented. The program experienced significant increases in participation in both Virginia and North Carolina in 2023. Many customers have expressed to the program that they believe it is too good to be true. To address this sentiment the program is creating new marketing materials containing referrals and case studies for past participants for various targeted building types to be provided to potential participants.

<sup>&</sup>lt;sup>180</sup> Virginia Small Business Improvement Enhanced Program Terms and Conditions.

<sup>181</sup> North Carolina Small Business Improvement Enhanced Program Terms and Conditions.



In 2022 DNV conducted an impact evaluation of the lighting measures in this program, as part of a multi-program nonresidential lighting study because lighting accounted for approximately 90% of the gross annual savings in this program and the previous DSM Phase V Small Business Improvement Program. The detailed impact evaluation report can be found in the 2023 EMV report file under Case No. PUR-2021-00247.

| End use               | Measure Measure                                 |
|-----------------------|-------------------------------------------------|
| Building envelope     | Window film                                     |
| Domestic hot water    | VFD on hot water pump                           |
| Plug-load             | Vending miser                                   |
|                       | T5/T8 LED lamps or fluorescent lamps/ballasts   |
| Lighting              | LED lamp and fixture                            |
|                       | LED exit signs                                  |
|                       | Occupancy sensors                               |
|                       | De-lamping                                      |
|                       | Anti-sweat heater controls                      |
|                       | Door closer (cooler and freezer)                |
|                       | Strip curtain (cooler and freezer)              |
| Refrigeration         | Evaporator fan electronically commutated motors |
|                       | Evaporator fan motor controls                   |
|                       | Variable frequency drives                       |
|                       | Night cover                                     |
|                       | Unitary/split AC and HP upgrade                 |
| HVAC                  | Dual enthalpy air-side economizer               |
|                       | Programmable thermostat                         |
| HVAC, recommissioning | Duct testing and sealing                        |
|                       | Unitary/split AC and HP tune-up                 |
|                       | Refrigerant charge correction                   |

| Table 4 20   | Mancurac | offered | through | Cmall | Ducinaga | Improvement | Drogram |
|--------------|----------|---------|---------|-------|----------|-------------|---------|
| 1 able 4-29. | weasures | onereu  | unrouun | Small | Dusiness | improvement | Prodram |

# 4.10.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-30 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

| Table 4-30  | Non-Residential | Small Business | Improvement | Enhanced P | rogram (P | Phase VIII) | planning | assumptions |
|-------------|-----------------|----------------|-------------|------------|-----------|-------------|----------|-------------|
| Table 4-00. | Non-Residential | oman Dusiness  | improvement | Limanceur  | rogram (r | nase vinj   | plaining | assumptions |

| Assumption                                                                 | Description               |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 93%                       |
| Measure life (years)                                                       | 11.0                      |
| Gross average annual energy savings per participant (kWh/year)             | 15,602                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 4.91                      |



| Assumption                                                                 | Description |
|----------------------------------------------------------------------------|-------------|
| Gross average winter coincident peak demand reduction (kW) per participant | 3.16        |
| Net average annual energy savings per participant (kWh/year)               | 14,510      |
| Net average summer coincident peak demand reduction (kW) per participant   | 4.57        |
| Net average winter coincident peak demand reduction (kW) per participant   | 2.94        |
| Average rebate (\$US) per participant                                      | \$3,161     |

# 4.10.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.10.3.1 Key Virginia program data

Table 4-31 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category          | Item                            | 2021         | 2022        | 2023        | Program total<br>(2020–2023) |
|-------------------|---------------------------------|--------------|-------------|-------------|------------------------------|
| Operations        | Direct rebate                   |              |             |             |                              |
| and               | Direct implementation           |              |             |             |                              |
| management        | Direct EM&V                     |              |             |             |                              |
| costs (\$)        | Indirect other (administrative) | \$114,584    | \$143,863   | \$331,207   | \$592,056                    |
|                   | Total <sup>183</sup>            | \$2,443,713  | \$3,445,530 | \$4,901,879 | \$10,847,412                 |
| Tatal an ata (ft) | Planned                         | \$3,564,498  | \$3,652,065 | \$3,690,005 | \$10,906,568                 |
| lotal costs (\$)  | Variance                        | -\$1,120,785 | -\$206,535  | \$1,211,874 | -\$59,156                    |
|                   | Annual % of planned             | 69%          | 94%         | 133%        | 99%                          |
|                   | Total (Gross)                   | 307          | 591         | 947         | 1,845                        |
| Desticinanto      | Planned (Gross)                 | 634          | 634         | 634         | 1,902                        |
| Participants      | Variance                        | -327         | -43         | 313         | -57                          |
|                   | Annual % of planned (Gross)     | 48%          | 93%         | 149%        | 97%                          |
| Installed         | Total gross deemed savings      | 2,429,201    | 5,119,684   | 5,161,646   | 12,710,531                   |
| energy            | Realization rate                | 119%         | 119%        | 103%        | 112%                         |

| Table 4-31 | . Virginia Non-Residential Small Business | s Improvement Enhanced Program performance indicators |
|------------|-------------------------------------------|-------------------------------------------------------|
| (2020-202: | 3) <sup>182</sup>                         |                                                       |

<sup>&</sup>lt;sup>182</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>183</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                                     | Item                                                 | 2021      | 2022       | 2023       | Program total<br>(2020–2023) |
|----------------------------------------------|------------------------------------------------------|-----------|------------|------------|------------------------------|
| savings                                      | Realization rate adjustment                          | 456,770   | 966,932    | 130,354    | 1,554,056                    |
| (kWh/year)                                   | Adjusted gross savings                               | 2,885,972 | 6,086,616  | 5,292,000  | 14,264,588                   |
|                                              | Net-to-gross rate weighted by measure <sup>184</sup> | 74%       | 74%        | 75%        | 75%                          |
|                                              | Net-to-gross adjustment                              | -754,710  | -1,596,051 | -1,310,291 | -3,661,052                   |
|                                              | Net adjusted savings                                 | 2,131,262 | 4,490,565  | 3,981,709  | 10,603,536                   |
|                                              | Planned savings (Net)                                | 9,199,251 | 9,199,251  | 9,199,251  | 27,597,754                   |
|                                              | Annual % toward planned savings (Net)                | 23.2%     | 48.8%      | 43.3%      | 38.4%                        |
|                                              | Avg. savings per participant<br>(Gross)              | 7,913     | 8,663      | 5,451      | 6,889                        |
|                                              | Avg. savings per participant (Net)                   | 6,942     | 7,598      | 4,205      | 5,747                        |
|                                              | · · · · ·                                            |           |            |            |                              |
|                                              | Total gross deemed demand                            | 448.9     | 1,076.5    | 1,197.5    | 2,723.0                      |
|                                              | Realization rate                                     | 100%      | 100%       | 99%        | 100%                         |
|                                              | Realization rate adjustment                          | 0         | 0          | -7.3       | -7.3                         |
|                                              | Adjusted gross demand                                | 448.9     | 1,076.5    | 1,190.2    | 2,715.7                      |
|                                              | Net-to-gross rate weighted by measure <sup>184</sup> | 79%       | 77%        | 80%        | 79%                          |
| Installed                                    | Net-to-gross adjustment                              | -94.5     | -243.3     | -236.6     | -574.4                       |
| demand                                       | Net adjusted demand                                  | 354.54    | 833.2      | 955.7      | 2,143.3                      |
| reduction (kW)                               | Planned demand (Net)                                 | 2,895.0   | 2,895.0    | 2,895.0    | 8,684.9                      |
|                                              | Annual % toward Planned reduction (Net)              | 12.2%     | 28.8%      | 33.0%      | 24.7%                        |
|                                              | Avg. demand per participant<br>(Gross)               | 1.5       | 1.8        | 1.3        | 1.5                          |
|                                              | Avg. demand per participant<br>(Net)                 | 1.2       | 1.4        | 1.0        | 1.2                          |
|                                              |                                                      |           |            |            |                              |
|                                              | Total gross deemed demand                            | 327.7     | 629.6      | 550.9      | 1,508.2                      |
|                                              | Realization rate                                     | 100%      | 100%       | 99%        | 100%                         |
|                                              | Realization rate adjustment                          | 0         | 0          | -4.1       | -4.1                         |
| Installed                                    | Adjusted gross demand                                | 327.7     | 629.6      | 546.8      | 1,504.0                      |
| Installed<br>winter demand<br>reduction (kW) | Net-to-gross rate weighted by measure <sup>184</sup> | 77%       | 76%        | 77%        | 77%                          |
|                                              | Net-to-gross adjustment                              | -75.1     | -151.2     | -125.7     | -351.9                       |
|                                              | Net adjusted demand                                  | 252.6     | 478.4      | 422.3      | 1,153.3                      |
|                                              | Planned demand (Net)                                 | 1,863.3   | 1,863.3    | 1,863.3    | 5,589.9                      |
|                                              | Annual % toward planned                              | 13.6%     | 25.7%      | 22.7%      | 20.6%                        |

<sup>184</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 98% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                         | Item                                   | 2021    | 2022    | 2023    | Program total<br>(2020–2023) |
|----------------------------------|----------------------------------------|---------|---------|---------|------------------------------|
|                                  | reduction (Net)                        |         |         |         |                              |
|                                  | Avg. demand per participant<br>(Gross) | 1.1     | 1.1     | 0.6     | 0.8                          |
|                                  | Avg. demand per participant<br>(Net)   | 0.8     | 0.8     | 0.4     | 0.6                          |
|                                  | \$Admin. per participant (Gross)       | \$381   | \$290   | \$321   | \$321                        |
| Cumulative                       | \$Admin. per kWh/year (Gross)          | \$0.05  | \$0.03  | \$0.05  | \$0.05                       |
| Annual<br>Program<br>performance | \$Admin. per kw (Gross)                | \$261   | \$171   | \$217   | \$217                        |
|                                  | \$EM&V per total costs (\$)            | 8.7%    | 6.6%    | 5.8%    | 5.8%                         |
|                                  | \$Rebate per participant (Gross)       | \$3,184 | \$3,244 | \$3,204 | \$3,204                      |

#### 4.10.3.2 Key North Carolina program data

Table 4-32 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 4-32. North Carolina Non-Residential | Small Business Improvement Enhanced Program performance                                                        |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| indicators (2021–2023) <sup>182</sup>      | and the second break the regiment of the second |

| Category                        | Item                            | 2021       | 2022      | 2023      | Program total<br>(2021–2023) |
|---------------------------------|---------------------------------|------------|-----------|-----------|------------------------------|
| Operations                      | Direct rebate                   |            |           |           |                              |
| and                             | Direct implementation           |            |           |           |                              |
| management                      | Direct EM&V                     |            |           |           |                              |
| costs (\$)                      | Indirect other (administrative) | \$3,866    | \$6,068   | \$26,051  | \$35,984                     |
|                                 | Total <sup>183</sup>            | \$82,440   | \$145,320 | \$385,554 | \$613,314                    |
| Total costs (\$)                | Planned                         | \$221,797  | \$233,024 | \$226,686 | \$681,507                    |
|                                 | Variance                        | -\$139,357 | -\$87,704 | \$158,867 | -\$68,194                    |
|                                 | Annual % of planned             | 37%        | 62%       | 170%      | 90%                          |
|                                 | Total (Gross)                   | 8          | 8         | 47        | 63                           |
|                                 | Planned (Gross)                 | 41         | 41        | 41        | 123                          |
| Participants                    | Variance                        | -33        | -33       | 6         | -60                          |
|                                 | Annual % of planned (Gross)     | 20%        | 20%       | 115%      | 51%                          |
|                                 | Total gross deemed savings      | 157 603    | 315 960   | 1 547 651 | 2 021 214                    |
| Installed                       | Realization rate                | 120%       | 120%      | 103%      | 107%                         |
| energy<br>savings<br>(kWb/year) | Realization rate adjustment     | 31,908     | 64.325    | 45,936    | 142.169                      |
|                                 | Adjusted gross savings          | 189,510    | 380,285   | 1.593.587 | 2.163.382                    |
| ()ear)                          | Net-to-gross rate weighted by   | 73%        | 73%       | 72%       | 72%                          |



| Category                 | Item                                                    | 2021    | 2022     | 2023      | Program total<br>(2021–2023) |
|--------------------------|---------------------------------------------------------|---------|----------|-----------|------------------------------|
|                          | measure <sup>184</sup>                                  |         |          |           |                              |
|                          | Net-to-gross adjustment                                 | -51,874 | -104,453 | -442,753  | -599,079                     |
|                          | Net adjusted savings                                    | 137,636 | 275,832  | 1,150,834 | 1,564,303                    |
|                          | Planned savings (Net)                                   | 594,904 | 594,904  | 594,904   | 1,784,713                    |
|                          | Annual % toward planned savings (Net)                   | 23.1%   | 46.4%    | 193.4%    | 87.7%                        |
|                          | Avg. savings per participant (Gross)                    | 19,700  | 39,495   | 32,929    | 32,083                       |
|                          | Avg. savings per participant (Net)                      | 17,205  | 34,479   | 24,486    | 24,830                       |
|                          | Total gross deemed demand                               | 30.3    | 66.8     | 224.2     | 321.2                        |
|                          | Pealization rate                                        | 100%    | 100%     | 00%       | 00%                          |
|                          | Realization rate adjustment (100%)                      | 100 %   | 100%     | -2.2      |                              |
|                          | Adjusted gross demand                                   | 30.3    | 66.8     | 222.0     | 319.0                        |
| Installed                | Net-to-gross rate weighted by<br>measure <sup>184</sup> | 73%     | 73%      | 72%       | 73%                          |
| summer                   | Net-to-gross adjustment                                 | -8.3    | -17.9    | -61.8     | -88.0                        |
| demand<br>reduction (kW) | Net adjusted demand                                     | 22.0    | 48.9     | 160.8     | 231.6                        |
| roudonon (nur)           | Planned demand (Net)                                    | 187.2   | 187.2    | 187.2     | 561.6                        |
|                          | Annual % toward planned reduction (Net)                 | 11.7%   | 26.1%    | 85.9%     | 41.2%                        |
| -                        | Avg. demand per participant (Gross)                     | 3.8     | 8.3      | 4.8       | 5.1                          |
|                          | Avg. demand per participant (Net)                       | 2.7     | 6.1      | 3.4       | 3.7                          |
|                          | Total among damaged damaged                             | 45.5    | 20.0     | 171.0     | 214.5                        |
|                          | l otal gross deemed demand                              | 15.5    | 28.0     | 1/1.0     | 214.5                        |
| -                        | Realization rate                                        | 100%    | 100%     | 99%       | 99%                          |
| -                        | Realization rate adjustment (100%)                      | 0       | 0        | -1.6      | -1.6                         |
| -                        | Adjusted gross demand<br>Net-to-gross rate weighted by  | 15.5    | 28.0     | 169.3     | 212.9                        |
| Installed                | measure <sup>184</sup>                                  | 13%     | 13%      | 73%       | 73%                          |
| winter demand            | Net-to-gross adjustment                                 | -4.1    | -7.6     | -46.5     | -58.3                        |
| reduction (kW)           | Net adjusted demand                                     | 11.4    | 20.4     | 123.3     | 155.1                        |
|                          | Planned demand (Net)                                    | 120.5   | 120.5    | 120.5     | 361.5                        |
|                          | Annual % toward planned reduction (Net)                 | 9.48%   | 16.9%    | 102.3%    | 42.9%                        |
|                          | Avg. demand per participant (Gross)                     | 1.9     | 3.5      | 3.6       | 3.4                          |
|                          | Avg. demand per participant (Net)                       | 1.4     | 2.6      | 2.6       | 2.5                          |
| <u> </u>                 | \$Admin_per participant (Gross)                         | \$483   | \$621    | \$571     | \$571                        |
| Annual                   | \$Admin, per kWh/year (Gross)                           | \$0.02  | \$0.02   | \$0.02    | \$0.02                       |
| Program                  | \$Admin. per kw (Gross)                                 | \$128   | \$102    | \$112     | \$112                        |
| performance              | \$EM&V per total costs (\$)                             | 2.7%    | 5.7%     | 4.2%      | 4.2%                         |



| Category | Item                             | 2021    | 2022    | 2023    | Program total<br>(2021–2023) |
|----------|----------------------------------|---------|---------|---------|------------------------------|
|          | \$Rebate per participant (Gross) | \$2,911 | \$5,072 | \$5,481 | \$5,481                      |



#### 4.10.3.3 Additional Virginia program data

Figure 4-56 and Figure 4-57 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Participation increased yet again in 2023, as shown in Figure 4-56. The most frequently implemented measures were "HVAC tune-up," conducted by 89% of program participants, and "Duct test and seal" conducted by 69% of program participants. The high prevalence of the aforementioned measures may be due to the program's efforts to maintain contact with customers to remind them about previously recommended measures, and to recommend that they reimplement maintenance measures that have passed their expected useful life (e.g. HVAC tune-ups).<sup>185</sup>

Figure 4-56. Virginia Small Business Improvement Enhanced Program participation by measure and year



<sup>&</sup>lt;sup>185</sup> Note that the participant counts in Figure 4-56 and Figure 4-57 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-31), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The gross savings by measure were in almost the opposite order of the participation. LED lamps again accounted for most gross annual energy savings (84%) in 2023, as shown in Figure 4-57. Figure 4-58 shows that the program net savings was 77% of the gross in 2023. Net savings values for lighting measures incorporate findings from the lighting impact evaluation conducted in program year 2022.



Figure 4-57. Virginia Non-Residential Small Business Improvement Enhanced Program gross annual energy savings (MWh/year) by measure and year



Figure 4-58. Virginia Non-Residential Small Business Improvement Enhanced Program net annual energy savings (MWh/year) by measure and year





Figure 4-59 and Figure 4-60 show participation and gross annual energy savings by building type and year.

In 2023, "mercantile (retail, not mall)" and "religious worship" continued to be the top two building types with the most program participants. The third and fourth most frequent building types changed to "service (beauty, auto repair workshop)," and "food service (full service)" respectively.

Figure 4-59. Virginia Non-Residential Small Business Improvement Enhanced Program participation by building type and year





Figure 4-60 shows that "religious worship" building types accounted for a plurality of gross savings in 2023 (21%). Building types "service (beauty, auto repair workshop)," "warehouse and storage," and "mercantile (retail, not mall)" are the second, third, and fourth most frequent building types accounting for 20%, 16%, and 16% of gross savings respectively. Figure 4-61 shows that the aforementioned building types also account for the greatest proportion of net savings in the same order.







Figure 4-61. Virginia Non-Residential Small Business Improvement Enhanced Program net annual energy savings by building type and year (MWh/year)





#### 4.10.3.4 Additional North Carolina program data Figure 4-62.

and Figure 4-63 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

In 2023, participation increased dramatically to nearly 600% greater than in previous years due to an unusual uptick in participation in the later part of the program year. The measures most implemented by participants were LED lamps, HVAC and tune-up, and duct test and seal. LED lamps reclaimed the top spot, accounting for most installations (77%), as shown in Figure 4-62.

# Figure 4-62. North Carolina Non-Residential Small Business Improvement Enhanced Program participation by measure and year. <sup>186</sup>



<sup>&</sup>lt;sup>186</sup> Note that the participant counts in Figure 4-62 and Figure 4-63 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 4-32), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



LED lamps continued to account for most gross and net savings in 2023 (both at 99%), as shown in Figure 4-63 and Figure 4-64, respectively. The program achieved overall net savings of approximately 74% of overall gross savings. The net savings accounts for the impact evaluation findings from the program year 2022 lighting impact evaluation referenced above.

Figure 4-63. North Carolina Non-Residential Small Business Improvement Enhanced Program gross annual energy savings (MWh/year) by measure and year





Figure 4-64. North Carolina Non-Residential Small Business Improvement Enhanced Program net annual energy savings (MWh/year) by measure and year





Figure 4-65 and Figure 4-66 show participation and gross annual energy savings by building type and year. In 2023, a plurality of participants (23%) were "religious worship" building types, then "mercantile (retail, not mall) at 19%, and finally "service (beauty, auto repair, workshop)" and "warehouse and storage tied at 15% each, as shown in Figure 4-65.



Figure 4-65. North Carolina Non-Residential Small Business Improvement Enhanced Program participation by building type and year



Figure 4-66 shows that "warehouse and storage" (29%) continued to be the lead building type in gross savings in 2023. "Mercantile (retail, not mall)" (21%) overtook "service (beauty, auto repair workshop)" (17%) for second most savings. Figure 4-67 shows that the aforementioned building types also account for the greatest proportion of net savings in the same order.







Figure 4-67. North Carolina Non-Residential Small Business Improvement Enhanced Program net annual energy savings by building type and year (MWh/year)





# 4.11 Non-Residential Agricultural Energy Efficiency – Virginia

# 4.11.1 Program description

The Non-Residential Agriculture Program provides incentives to qualifying non-residential agribusiness customers to replace aging and inefficient agriculture equipment such as lighting, irrigation equipment, and systems with high-efficiency equipment. In 2022, implementation vendors reported that many agricultural customers were served under residential rates, rendering them ineligible to participate in the non-residential program. Consequently, on August 4<sup>th</sup>, 2023, Dominion received SCC approval to expand eligibility to residential customers.<sup>187</sup> Customers must be owners of the facilities, responsible for the electric bill, or able to secure permission to complete installation of the energy-efficient measures.<sup>188</sup>

Eligible measures include:

- Ventilation and circulation fans
- High-volume, low-speed fans
- Dairy lighting controls
- Horticulture and poultry lighting
- T5 and T8 lamps
- Automatic milker take-offs
- Dairy plate coolers
- Grain storage aerators fan controls
- Low-pressure irrigation systems
- Variable frequency drives
  - Dust collection system fans
  - Irrigation pumps
  - Tobacco curing fans
  - Greenhouse ventilation and poultry house fans
  - Dairy vacuum pumps

Customers must use a participating contractor to be eligible for the rebate. Before beginning work, the qualified contractor must conduct an initial assessment.<sup>189</sup> Once the assessment and measures have been approved, the project may proceed. However, the incentive is not paid until the project is completed. Customers must submit the rebate application within 45 days of the date of project completion. Rebates are processed within 90 days.

The Virginia SCC approved this program, as part of the DSM Phase IX programs, on September 7, 2021 (Case No. PUR-2020-00274) for a five-year period beginning January 1, 2022, through December 31, 2026. The program officially launched on June 1, 2022.

# 4.11.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-33 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt



<sup>187</sup> Case No. PUR-2022-00210. Final Order, Virginia Electric and Power Company (2022), Approval of the 2022 DSM Update,

<sup>188</sup> Virginia Non-Residential Agricultural Program Terms and Conditions

<sup>189</sup> Non-Residential Agricultural Program Initial Assessment for Virginia



the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

Table 4-33. Non-residential heating and cooling efficiency program initial planning assumptions

| Assumption                                                                 | Value                   |  |
|----------------------------------------------------------------------------|-------------------------|--|
| Target market                                                              | Agricultural facilities |  |
| NTG factor                                                                 | 97%                     |  |
| Measure life (years)                                                       | 14                      |  |
| Gross average annual energy savings (kWh/year) per participant             | 12,787                  |  |
| Gross average summer coincident peak demand reduction (kW) per participant | 2.67                    |  |
| Gross average winter coincident peak demand reduction (kW) per participant | 3.40                    |  |
| Net average annual energy savings (kWh/year) per participant               | 12,403                  |  |
| Net average summer coincident peak demand reduction (kW) per participant   | 1.60                    |  |
| Net average winter coincident peak demand reduction (kW) per participant   | 3.30                    |  |
| Average rebate (\$US) per participant                                      | \$1,654                 |  |

#### 4.11.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.11.3.1 Key Virginia program data

Table 4-34 provides performance indicator data from 2021 through 2023, in Virginia. cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 4-34. Virginia Non-Residential Agriculture Program performance indicators (2021–2023)<sup>190</sup>

| Category                                   | Item                            | 2021     | 2022       | 2023      | Program total<br>(2021–2023) |
|--------------------------------------------|---------------------------------|----------|------------|-----------|------------------------------|
| Operations and<br>Management<br>Costs (\$) | Direct Rebate                   |          |            |           |                              |
|                                            | Direct Implementation           |          |            |           |                              |
|                                            | Direct EM&V                     |          |            |           |                              |
|                                            | Indirect Other (Administrative) | \$974    | \$19,669   | \$59,808  | \$80,451                     |
|                                            |                                 |          |            |           |                              |
| Total Costs (\$)                           | Total <sup>191</sup>            | \$20,770 | \$471,081  | \$885,158 | \$1,377,009                  |
|                                            | Planned                         | \$0      | \$909,217  | \$859,374 | \$1,768,591                  |
|                                            | Variance                        | \$20,770 | -\$438,137 | \$25,785  | -\$391,582                   |
|                                            | Annual % of Planned             | N/A      | 52%        | 103%      | 78%                          |

<sup>&</sup>lt;sup>190</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>191</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.


| Category         | Item                                        | 2021 | 2022      | 2023      | Program total<br>(2021–2023) |
|------------------|---------------------------------------------|------|-----------|-----------|------------------------------|
|                  | Total (Gross)                               | 0    | 3         | 8         | 11                           |
| Participants     | Planned (Gross)                             | 0    | 151       | 151       | 302                          |
| Participants     | Variance                                    | 0    | -148      | -143      | -291                         |
|                  | Annual % of Planned (Gross)                 | N/A  | 2%        | 5%        | 4%                           |
|                  | Total Gross Deemed Savings                  | 0    | 4,980,594 | 915,873   | 5,896,466                    |
|                  | Realization Rate                            | N/A  | 100%      | 100%      | 100%                         |
|                  | Realization Rate Adjustment                 | 0    | 0         | 0         | 0                            |
|                  | Adjusted Gross Savings                      | 0    | 4,980,594 | 915,873   | 5,896,466                    |
| 0.000.000.000    | Net-To-Gross Ratio <sup>192</sup>           | N/A  | 97%       | 97%       | 97%                          |
| Installed Energy | Net-to-Gross Adjustment                     | 0    | -149,418  | -27,476   | -176,894                     |
| (kWh/year)       | Net Adjusted Savings                        | 0    | 4,831,176 | 888,397   | 5,719,572                    |
| ,,               | Planned Savings (Net)                       | 0    | 1,872,912 | 1,872,912 | 3,745,824                    |
|                  | Annual % Toward Planned Savings<br>(Net)    | N/A  | 258%      | 47%       | 153%                         |
|                  | Avg. Savings per Participant (Gross)        | N/A  | 1,660,198 | 114,484   | 536,042                      |
|                  | Avg. Savings per Participant (Net)          | N/A  | 1,610,392 | 111,050   | 519,961                      |
|                  | Total Gross Deemed Demand                   | 0    | 793       | 57        | 850                          |
|                  | Realization Rate                            | N/A  | 100%      | 100%      | 100%                         |
|                  | Realization Rate Adjustment                 | 0    | 0         | 0         | 0                            |
|                  | Adjusted Gross Demand                       | 0    | 793       | 57        | 851                          |
|                  | Net-To-Gross Rate Ratio <sup>192</sup>      | N/A  | 97%       | 97%       | 97%                          |
| Installed Summer | Net-to-Gross Adjustment                     | 0    | -24       | -2        | -26                          |
| Demand           | Net Adjusted Demand                         | 0    | 770       | 55        | 825                          |
| Reduction (kW)   | Planned Demand (Net)                        | 0    | 245       | 245       | 490                          |
|                  | Annual % Toward Planned Demand<br>(Net)     | N/A  | 314%      | 23%       | 168%                         |
|                  | Avg. Peak Demand per Participant<br>(Gross) | N/A  | 264       | 7         | 77                           |
|                  | Avg. Demand per Participant (Net)           | N/A  | 257       | 7         | 75                           |
|                  | Total Gross Deemed Demand                   | 0    | 0         | 10        | 10                           |
| Installed Minter | Realization Rate                            | N/A  | N/A       | 100%      | 100%                         |
| Demand           | Realization Rate Adjustment                 | 0    | 0         | 0         | 0                            |
| Reduction (kW)   | Adjusted Gross Demand                       | 0    | 0         | 9.8       | 98                           |
|                  | Net-To-Gross Rate Ratio <sup>192</sup>      | N/A  | N/A       | 97%       | 97%                          |

<sup>&</sup>lt;sup>192</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 95% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                    | Item                                        | 2021  | 2022     | 2023     | Program total<br>(2021–2023) |
|---------------------------------------------|---------------------------------------------|-------|----------|----------|------------------------------|
|                                             | Net-to-Gross Adjustment                     | 0     | 0        | -0.3     | -0.3                         |
|                                             | Net Adjusted Demand                         | 0     | 0        | 9.5      | 9.5                          |
|                                             | Planned Demand (Net)                        | 0     | 499      | 499      | 998                          |
|                                             | Annual % Toward Planned Demand (Net)        | N/A   | 0%       | 2%       | 1%                           |
|                                             | Avg. Peak Demand per Participant<br>(Gross) | N/A   | 0        | 1.2      | 0.9                          |
|                                             | Avg. Demand per Participant (Net)           | N/A   | 0        | 1.2      | 0.9                          |
| Cumulative<br>Annual Program<br>Performance | \$Admin. per Participant (Gross)            | N/A   | \$6,881  | \$7,314  | \$7,314                      |
|                                             | \$Admin. per kWh/year (Gross)               | N/A   | \$0.00   | \$0.01   | \$0.01                       |
|                                             | \$Admin. per kW (Gross)                     | N/A   | \$26     | \$95     | \$95                         |
|                                             | \$EM&V per Total Costs (\$)                 | 74.6% | 18.5%    | 12.9%    | 12.9%                        |
|                                             | \$Rebate per Participant (Gross)            | N/A   | \$16,668 | \$39,021 | \$39,021                     |



## 4.11.3.2 Additional Virginia program data

Figure 4-68 and Figure 4-69 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

As shown in Figure 4-68, the number of new participants increased from three in 2022 to eight in 2023. In 2022, only the horticulture LED lighting measure was implemented but in 2023 participants installed a wider selection of measures. Broadening eligibility across agricultural customers on residential rate codes in 2023 contributed to the measurable increase in participation and measure adoption relative to 2022.<sup>193</sup>





<sup>&</sup>lt;sup>193</sup> Note that the participant counts in Figure 4-68 and Figure 4-69 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-34), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-69 shows that in 2023 annual savings decreased from the previous year despite increased participation and measure adoption. The decline is primarily attributed to three customers who adopted the horticulture LED lighting measure in 2022. The lighting measure produced very high per-customer energy savings. In 2023, horticulture LED lighting still is the highest contributor to savings (95%).







# 4.12 Non-Residential Building Automation and Controls Program System – Virginia and North Carolina

# 4.12.1 Program description

The Non-Residential Building Automation and Controls program provides businesses with energy savings by the installation of building automation and controls. This includes incentives to install new systems or to replace existing obsolete systems when deemed necessary.

Non-residential customers are eligible for the program if they are facility owner, responsible for the facility electric bill and have not opted out of the DSM rider. Customers are allowed to receive a rebate for each location that they own. Other eligibility requirements include:<sup>194</sup>

- Rebated DDC controls system must be new, in an existing building, and serving the HVAC equipment
- Both electric and gas heat are eligible
- Eligible sites must be a minimum of 50,000 square feet
- The minimum control system project cost is \$2.50 per square foot
- · An initial assessment form must be submitted during the design phase
- The controls contractor must implement a minimum number of measure recommendations to be eligible for incentive
- · Measures will be verified with an on-site visit and will be tested post-installation



This program is promoted and marketed by contractors who specialize in the design, installation, and maintenance of building automation systems and can provide the customer with comprehensive automation solutions. Equipment product lines include brands such as Carrier, Schneider Electric, Johnson Controls, Siemens, and Trane.

The Virginia SCC approved the Non-Residential Building Automation and Controls program as part of the DSM Phase IX programs on September 7, 2021 (Case No. PUR-2020-00274) for the five-year period of January 1, 2022, through December 31, 2026. The program officially launched in

Virginia on January 1, 2022. The North Carolina Utilities Commission approved the Non-Residential Building Automation and Controls program as part of the DSM Phase IX programs on May 10, 2022 (Docket No. E-22, SUB 614). The program officially launched in North Carolina on August 1, 2022.

# 4.12.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-35 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

<sup>&</sup>lt;sup>194</sup> Program Overview Building Automation Program, Building Automation Program Terms and Conditions



#### Table 4-35. Non-Residential Building Automation and Controls initial planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-Residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 20                        |
| Average annual energy savings per participant (kWh/year)                   | 149,999                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 15.13                     |
| Gross average winter coincident peak demand reduction (kW) per participant | 79.64                     |
| Net average annual energy savings per participant (kWh/year)               | 134,999                   |
| Net average summer coincident peak demand reduction (kW) per participant   | 13.62                     |
| Net average winter coincident peak demand reduction (kW) per participant   | 71.67                     |
| Average rebate (\$US) per participant                                      | \$7,500                   |

## 4.12.3 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.12.3.1 Key Virginia program data

Table 4-36 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category         | Item                            | 2021    | 2022       | 2023       | Program total<br>(2021–2023) |
|------------------|---------------------------------|---------|------------|------------|------------------------------|
|                  | Direct rebate                   |         |            |            |                              |
| Operations and   | Direct implementation           | 4       |            |            |                              |
| (\$)             | Direct EM&V                     |         |            |            |                              |
|                  | Indirect other (administrative) | \$315   | \$17,764   | \$24,307   | \$42,386                     |
|                  | Total <sup>196</sup>            | \$6,714 | \$425,457  | \$359,739  | \$791,910                    |
| Total costs (\$) | Planned                         | \$0     | \$961,106  | \$881,265  | \$1,842,371                  |
|                  | Variance                        | \$6,714 | -\$535,649 | -\$521,527 | -\$1,050,461                 |
|                  | Annual % of planned             | N/A     | 44%        | 41%        | 43%                          |

Table 4-36. Virginia Non-Residential Building Automation and Controls Program performance indicators (2021–2023)<sup>195</sup>

<sup>195</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>196</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category           | Item                                        | 2021 | 2022      | 2023      | Program total<br>(2021–2023) |
|--------------------|---------------------------------------------|------|-----------|-----------|------------------------------|
|                    | Total (Gross)                               | 0    | 0         | 0         | 0 <sup>197</sup>             |
| Deutlaturente      | Planned (Gross)                             | 0    | 28        | 28        | 56                           |
| Participants       | Variance                                    | 0    | -28       | -28       | -56                          |
|                    | Annual % of planned (gross)                 | N/A  | 0%        | 0%        | 0%                           |
|                    | Total gross deemed savings                  | 0    | 0         | 0         | 0                            |
|                    | Realization rate                            | N/A  | N/A       | N/A       | N/A                          |
|                    | Realization rate adjustment                 | 0    | 0         | 0         | 0                            |
|                    | Adjusted gross savings                      | 0    | 0         | 0         | 0                            |
|                    | Net-to-gross ratio                          | N/A  | N/A       | N/A       | N/A                          |
| Installed energy   | Net-to-gross adjustment                     | 0    | 0         | 0         | 0                            |
| savings (kWh/year) | Net adjusted savings                        | 0    | 0         | 0         | 0                            |
|                    | Planned savings (Net)                       | 0    | 3,779,975 | 3,779,975 | 7,559,950                    |
|                    | Annual % toward planned savings (Net)       | 0%   | 0%        | 0%        | 0%                           |
|                    | Avg. savings per participant (Gross)        | 0    | 0         | 0         | 0                            |
|                    | Avg. savings per participant (Net)          | 0    | 0         | 0         | 0                            |
|                    | Total gross deemed demand                   | 0    | 0         | 0         | 0                            |
|                    | Realization rate                            | N/A  | N/A       | N/A       | N/A                          |
|                    | Realization rate adjustment                 | 0    | 0         | 0         | 0                            |
|                    | Adjusted gross demand                       | 0    | 0         | 0         | 0                            |
|                    | Net-to-gross ratio                          | N/A  | N/A       | N/A       | N/A                          |
| Installed summer   | Net-to-gross adjustment                     | 0    | 0         | 0         | 0                            |
| demand reduction   | Net adjusted demand                         | 0    | 0         | 0         | 0                            |
| (KVV)              | Planned demand (Net)                        | 0    | 381.4     | 381.4     | 762.8                        |
|                    | Annual % toward planned demand (Net)        | 0%   | 0%        | 0%        | 0%                           |
|                    | Avg. peak demand per participant<br>(Gross) | 0    | 0         | 0         | 0                            |
|                    | Avg. demand per participant (Net)           | 0    | 0         | 0         | 0                            |
|                    | Total gross deemed demand                   | 0    | 0         | 0         | 0                            |
|                    | Realization rate                            | N/A  | N/A       | N/A       | N/A                          |
|                    | Realization rate adjustment                 | 0    | 0         | 0         | 0                            |
| Installed winter   | Adjusted gross demand                       | 0    | 0         | 0         | 0                            |
| demand reduction   | Net-to-gross ratio                          | N/A  | N/A       | N/A       | N/A                          |
| (kW)               | Net-to-gross adjustment                     | 0    | 0         | 0         | 0                            |
|                    | Net adjusted demand                         | 0    | 0         | 0         | 0                            |
|                    | Planned demand (Net)                        | 0    | 2,006.8   | 2,006.8   | 4.013.6                      |
|                    | Annual % toward planned demand              | 0%   | 0%        | 0         | 0%                           |

<sup>197</sup> There was no Virginia participation in 2023 due to long measure installation lead times.



| Category               | Item                                     | 2021  | 2022 | 2023 | Program total<br>(2021–2023) |
|------------------------|------------------------------------------|-------|------|------|------------------------------|
|                        | (Net)                                    |       |      |      |                              |
|                        | Avg. peak demand per participant (Gross) | 0     | 0    | 0    | 0                            |
|                        | Avg. demand per participant (Net)        | 0     | 0    | 0    | 0                            |
|                        |                                          |       |      |      |                              |
|                        | \$Admin. per participant (Gross)         | N/A   | N/A  | N/A  | N/A                          |
| Cumulative Annual      | \$Admin. per kWh/year (Gross)            | N/A   | N/A  | N/A  | N/A                          |
| Program<br>performance | \$Admin. per kW (Gross)                  | N/A   | N/A  | N/A  | N/A                          |
|                        | \$EM&V per total costs (\$)              | 32.6% | 6.6% | 6.3% | 6.3%                         |
|                        | \$Rebate per participant (Gross)         | N/A   | N/A  | N/A  | N/A                          |

## 4.12.3.2 Key North Carolina program data

Table 4-37 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                 | Item                            | 2022      | 2023      | Program total<br>(2022–2023) |
|--------------------------|---------------------------------|-----------|-----------|------------------------------|
|                          | Direct rebate                   |           |           |                              |
| Operations and           | Direct implementation           |           |           |                              |
| management costs (\$)    | Direct EM&V                     |           |           |                              |
|                          | Indirect other (administrative) | \$388     | \$1,541   | \$1,929                      |
|                          | Total <sup>196</sup>            | \$9,301   | \$22,806  | \$32,107                     |
| Total anota (f)          | Planned                         | \$24,635  | \$54,138  | \$78,773                     |
| lotal costs (\$)         | Variance                        | -\$15,334 | -\$31,332 | -\$46,666                    |
|                          | Annual % of planned             | 38%       | 42%       | 41%                          |
|                          | Total (Gross)                   | 0         | 0         | 0 <sup>197</sup>             |
| Deutleineute             | Planned (Gross)                 | 2         | 2         | 4                            |
| Participants             | Variance                        | -2        | -2        | -4                           |
|                          | Annual % of planned (Gross)     | 0%        | 0%        | 0%                           |
|                          | Total gross deemed savings      | 0         | 0         | 0                            |
| Installed energy savings | Realization rate                | N/A       | N/A       | N/A                          |
| (kWh/year)               | Realization rate adjustment     | 0         | 0         | 0                            |
|                          | Adjusted gross savings          | 0         | 0         | 0                            |

| Table 4-37. | North Carolina Non-Residential E | uilding Automation and Co                   | ntrols Program performance indicator                                                                            |
|-------------|----------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| (2022-2023  | 3) <sup>195</sup>                | the market of the state of the state of the | Contraction of the second s |



| Category                     | Item                                        | 2022    | 2023    | Program total<br>(2022–2023) |
|------------------------------|---------------------------------------------|---------|---------|------------------------------|
|                              | Net-to-gross ratio                          | N/A     | N/A     | N/A                          |
|                              | Net-to-gross adjustment                     | 0       | 0       | 0                            |
|                              | Net adjusted savings                        | 0       | 0       | 0                            |
|                              | Planned savings (Net)                       | 269,998 | 269,998 | 539,996                      |
|                              | Annual % toward planned savings (Net)       | 0%      | 0%      | 0%                           |
|                              | Avg. Savings per participant (Gross)        | 0       | 0       | 0                            |
|                              | Avg. Savings per participant (Net)          | 0       | 0       | 0                            |
|                              | Total gross deemed demand                   | 0       | 0       | 0                            |
|                              | Realization rate                            | N/A     | N/A     | N/A                          |
|                              | Realization rate adjustment                 | 0       | 0       | 0                            |
|                              | Adjusted gross demand                       | 0       | 0       | 0                            |
|                              | Net-to-gross ratio                          | N/A     | N/A     | N/A                          |
| Installed summer             | Net-to-gross adjustment                     | 0       | 0       | 0                            |
| demand reduction (kW)        | Net adjusted demand                         | 0       | 0       | 0                            |
|                              | Planned demand (Net)                        | 27.2    | 27.2    | 54.5                         |
|                              | Annual % toward planned demand (Net)        | 0%      | 0%      | 0%                           |
|                              | Avg. peak demand per participant<br>(Gross) | 0       | 0       | 0                            |
|                              | Avg. demand per participant (Net)           | 0       | 0       | 0                            |
|                              | Total gross deemed demand                   | 0       | 0       | 0                            |
|                              | Poolization rate                            | N/A     | N/A     | NI/A                         |
|                              | Realization rate adjustment                 |         |         | 0                            |
|                              | Adjusted gross domand                       | 0       | 0       | 0                            |
|                              | Net to gross demand                         | N/A     | N/A     | 5 NI/A                       |
| Installed winter demand      | Net to gross adjustment                     |         |         | N/A                          |
| reduction<br>(kW)            | Net adjusted demand                         | 0       | 0       | 0                            |
| (                            | Planned demand (Net)                        | 143.3   | 143.3   | 286.7                        |
|                              | Annual % toward planned demand (Net)        | 0%      | 0%      | 0%                           |
|                              | Avg. peak demand per participant<br>(Gross) | 0       | 0       | 0                            |
|                              | Avg. demand per participant (Net)           | 0       | 0       | 0                            |
|                              | \$Admin_per participant (Gross)             | N/A     | N/A     | N/A                          |
|                              | \$Admin_per_kWb/year (Gross)                | N/A     | N/A     | N/A                          |
| Program performance          | \$Admin, per kW (Gross)                     | N/A     | N/A     | N/A                          |
| and the second second second | \$EM&V per total costs (\$)                 | 4.5%    | 5.3%    | 5.3%                         |



| Category | Item                             | 2022 | 2023 | Program total<br>(2022–2023) |
|----------|----------------------------------|------|------|------------------------------|
|          | \$Rebate per participant (Gross) | N/A  | N/A  | N/A                          |

# 4.12.3.3 Additional Virginia program data

There were no participants in Virginia through 2023.

#### 4.12.3.4 Additional North Carolina program data

There were no participants in North Carolina through 2023.



# 4.13 Non-Residential Building Optimization – Virginia and North Carolina

## 4.13.1 Program description

This program expands upon the existing Non-Residential Office Program, providing qualifying non-residential customers with incentives for the installation of energy-efficient improvements. The program includes recommissioning measures for various types of facilities. Measures eligible to receive a rebate include:



This program is implemented through a contractor network and, to be eligible for the rebate, customers must contact a participating contractor. All Dominion Energy non-residential customers are eligible, except for those exempted by statute, special contract, or who have opted out. Customers are considered participants only after a completed application form is processed and a rebate is issued. This process may take several months, as customers have 45 days to submit their rebate application, and Dominion Energy has 90 days to process it.

The Virginia SCC approved this program, as part of the DSM Phase IX programs, on September 7, 2021 (Case No. PUR-2020-00274) for a five-year period of January 1, 2022, through December 31, 2026. The program officially launched in

| End use  | Measure                            |  |
|----------|------------------------------------|--|
| Lighting | Schedule lighting                  |  |
|          | Schedule HVAC                      |  |
|          | Temperature setback                |  |
|          | Condensing water temperature reset |  |
|          | Discharge air temperature reset    |  |
|          | Static pressure reset              |  |
|          | Variable air volume box minimum    |  |
| 111/10   | Dual enthalpy economizer           |  |
| HVAC     | Temperature setup                  |  |
|          | Chilled water reset                |  |
|          | Outdoor air reduction              |  |
|          | Coil cleaning                      |  |
|          | Pump pressure reduction            |  |
|          | Schedule non-HVAC equipment        |  |
|          | Custom retrocommissioning measure  |  |

Virginia on January 1, 2022.<sup>198</sup> The North Carolina Utilities Commission approved this program on April 14, 2022 (Docket Ńo. E-22, SUB 614 – 621). The program officially launched in North Carolina on June 1, 2022.<sup>199</sup> Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

The program began receiving applications in 2022 and saw a steady increase in participation through 2023, exceeding both the number of planned participants and claimed savings. This upward trend is expected to continue into 2024, as the program attracts participants who would have previously engaged with the Non-Residential Office Program.

<sup>&</sup>lt;sup>198</sup> Virginia Non-Residential Building Optimization Program Terms and Conditions.

<sup>&</sup>lt;sup>199</sup> North Carolina Non-Residential Building Optimization Program Terms and Conditions



# 4.13.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-38 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.

#### Table 4-38. Non-Residential Building Optimization Program planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 7                         |
| Gross average annual energy savings (kWh/year) per participant             | 182,885                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 18.45                     |
| Gross average winter coincident peak demand reduction (kW) per participant | 97                        |
| Net average annual energy savings (kWh/year) per participant               | 164,596                   |
| Net average summer coincident peak demand reduction (kW) per participant   | 16.61                     |
| Net average winter coincident peak demand reduction (kW) per participant   | 87.38                     |
| Average rebate (\$US) per participant                                      | \$14,864                  |

# 4.13.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

## 4.13.3.1 Key Virginia program data

Table 4-39 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 1.39  | Virginia | Non-Re   | sidential | Building | Ontimization | Program | nerformance | indicators | (2021-2023 | 1200 |
|-------------|----------|----------|-----------|----------|--------------|---------|-------------|------------|------------|------|
| Table 4-35. | virginia | NOII-Re: | Sidenilai | Dunung   | Optimization | Flogram | periornance | mulcators  | 2021-2025  | ,    |

| Category          | Item                            | 2021  | 2022     | 2023     | Program total<br>(2021–2023) |
|-------------------|---------------------------------|-------|----------|----------|------------------------------|
| Operations        | Direct Rebate                   |       |          |          |                              |
| and<br>Management | Direct Implementation           |       |          |          |                              |
|                   | Direct EM&V                     |       |          |          |                              |
| Costs (\$)        | Indirect Other (Administrative) | \$328 | \$21,019 | \$84,657 | \$106,004                    |

<sup>&</sup>lt;sup>200</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                                     | Item                                        | 2021    | 2022        | 2023        | Program total<br>(2021–2023) |
|----------------------------------------------|---------------------------------------------|---------|-------------|-------------|------------------------------|
|                                              | Total <sup>201</sup>                        | \$6,996 | \$503,402   | \$1,252,932 | \$1,763,329                  |
| Total Costs                                  | Planned                                     | \$0     | \$1,100,849 | \$1,015,424 | \$2,116,273                  |
| (\$)                                         | Variance                                    | \$6,996 | -\$597,447  | \$237,507   | -\$352,944                   |
|                                              | Annual % of Planned                         | N/A     | 46%         | 123%        | 83%                          |
|                                              | Total (Gross)                               | 0       | 2           | 43          | 45                           |
| Deuticinente                                 | Planned (Gross)                             | 0       | 28          | 28          | 56                           |
| Participants                                 | Variance                                    | 0       | -26         | 15          | -11                          |
|                                              | Annual % of Planned (Gross)                 | N/A     | 7%          | 154%        | 80%                          |
|                                              | Total Gross Deemed Savings                  | 0       | 1,797,882   | 13,859,112  | 15,656,994                   |
|                                              | Realization Rate                            | N/A     | 100%        | 100%        | 100%                         |
| Installed<br>Energy<br>Savings<br>(kWh/year) | Realization Rate Adjustment                 | 0       | 0           | 0           | 0                            |
|                                              | Adjusted Gross Savings                      | 0       | 1,797,882   | 13,859,112  | 15,656,994                   |
|                                              | Net-to-Gross Ratio <sup>202</sup>           | N/A     | 90%         | 90%         | 90%                          |
|                                              | Net-to-Gross Adjustment                     | 0       | -179,788    | -1,385,911  | -1,565,699                   |
|                                              | Net Adjusted Savings                        | 0       | 1,618,094   | 12,473,201  | 14,091,294                   |
|                                              | Planned Savings (Net)                       | 0       | 4,608,702   | 4,608,702   | 9,217,404                    |
|                                              | Annual % Toward Planned Savings<br>(Net)    | N/A     | 35.1%       | 270.6%      | 152.9%                       |
|                                              | Avg. Savings per Participant (Gross)        | N/A     | 898,941     | 322,305     | 347,933                      |
|                                              | Avg. Savings per Participant (Net)          | N/A     | 809,047     | 290,074     | 313,140                      |
|                                              | Total Gross Deemed Demand                   | 0       | 47.2        | 315.9       | 363.1                        |
|                                              | Realization Rate                            | N/A     | 100%        | 100%        | 100%                         |
|                                              | Realization Rate Adjustment                 | 0       | 0           | 0           | 0                            |
|                                              | Adjusted Gross Demand                       | 0       | 47.2        | 315.9       | 363.1                        |
| Installed                                    | Net-to-Gross Ratio                          | N/A     | 90%         | 90%         | 90%                          |
| Summer                                       | Net-to-Gross Adjustment                     | 0       | -4.7        | -31.6       | -36.3                        |
| Demand<br>Reduction                          | Net Adjusted Demand                         | 0       | 42.4        | 284.3       | 326.8                        |
| (kW)                                         | Planned Demand (Net)                        | 0       | 465.0       | 465.0       | 930.0                        |
|                                              | Annual % Toward Planned Demand (Net)        | N/A     | 9.13%       | 61.1%       | 35.1%                        |
|                                              | Avg. Peak Demand per Participant<br>(Gross) | N/A     | 23.6        | 7.3         | 8.1                          |
|                                              | Avg. Demand per Participant (Net)           | N/A     | 21.2        | 6.6         | 7.3                          |

<sup>&</sup>lt;sup>201</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>202</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 90% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category                      | Item                                        | 2021  | 2022     | 2023     | Program total<br>(2021–2023) |
|-------------------------------|---------------------------------------------|-------|----------|----------|------------------------------|
|                               | Total Gross Deemed Demand                   | 0     | 11.7     | 22.7     | 34.4                         |
|                               | Realization Rate                            | N/A   | 100%     | 100%     | 100%                         |
|                               | Realization Rate Adjustment                 | 0     | 0        | 0        | 0                            |
|                               | Adjusted Gross Demand                       | 0     | 11.7     | 22.7     | 34.4                         |
| Installed                     | Net-to-Gross Ratio                          | N/A   | 90%      | 90%      | 90%                          |
| Winter<br>Demand<br>Reduction | Net-to-Gross Adjustment                     | 0     | -1.2     | -2.3     | -3.4                         |
|                               | Net Adjusted Demand                         | 0     | 10.5     | 20.4     | 30.9                         |
| (kW)                          | Planned Demand (Net)                        | 0     | 2,446.8  | 2,446.8  | 4,893.6                      |
|                               | Annual % Toward Planned Demand (Net)        | N/A   | 0.43%    | 0.84%    | 0.63%                        |
|                               | Avg. Peak Demand per Participant<br>(Gross) | N/A   | 5.8      | 0.5      | 0.8                          |
|                               | Avg. Demand per Participant (Net)           | N/A   | 5.3      | 0.5      | 0.7                          |
|                               | \$Admin. per Participant (Gross)            | N/A   | \$10,673 | \$2,356  | \$2,356                      |
| Cumulative                    | \$Admin. per kWh/year (Gross)               | N/A   | \$0.01   | \$0.01   | \$0.01                       |
| Annual                        | \$Admin. per kW (Gross)                     | N/A   | \$453    | \$292    | \$292                        |
| Performance                   | \$EM&V per Total Costs (\$)                 | 35.2% | 15.8%    | 9.7%     | 9.7%                         |
|                               | \$Rebate per Participant (Gross)            | N/A   | \$39,890 | \$15,011 | \$15,011                     |

# 4.13.3.2 Key North Carolina program data

Table 4-40 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 4-40. North Carolina Non-Residential Building Optimization Program performance indicators | (2022-2023)144 |
|-------------------------------------------------------------------------------------------------|----------------|
|-------------------------------------------------------------------------------------------------|----------------|

| Category                                      | Item                            | 2022      | 2023      | Program total<br>(2022–2023) |
|-----------------------------------------------|---------------------------------|-----------|-----------|------------------------------|
| Operations<br>and<br>Management<br>Costs (\$) | Direct Rebate                   |           |           |                              |
|                                               | Direct Implementation           |           |           |                              |
|                                               | Direct EM&V                     |           |           |                              |
| Costs (\$)                                    | Indirect Other (Administrative) | \$402     | \$1,962   | \$2,365                      |
|                                               |                                 |           |           |                              |
|                                               | Total <sup>201</sup>            | \$9,639   | \$29,044  | \$38,684                     |
| Total Costs                                   | Planned                         | \$28,217  | \$62,380  | \$90,597                     |
| (\$)                                          | Variance                        | -\$18,577 | -\$33,336 | -\$51,913                    |
|                                               | Annual % of Planned             | 34%       | 47%       | 43%                          |
|                                               |                                 |           |           |                              |
| Darticipanto                                  | Total (Gross)                   | 0         | 0         | 0                            |
| Failicipants                                  | Planned (Gross)                 | 2         | 2         | 4                            |



| Category              | Item                                            | 2022    | 2023    | Program total<br>(2022–2023) |
|-----------------------|-------------------------------------------------|---------|---------|------------------------------|
|                       | Variance                                        | -2      | -2      | -4                           |
|                       | Annual % of Planned (Gross)                     | 0%      | 0%      | 0%                           |
|                       | Total Gross Deemed Savings                      | 0       | 0       | 0                            |
|                       | Realization Rate                                | N/A     | N/A     | N/A                          |
|                       | Realization Rate Adjustment                     | 0       | 0       | 0                            |
|                       | Adjusted Gross Savings                          | 0       | 0       | 0                            |
| Installed             | Net-to-Gross Ratio <sup>203</sup>               | N/A     | N/A     | N/A                          |
| Energy                | Net-to-Gross Adjustment                         | 0       | 0       | 0                            |
| Savings<br>(kWb/year) | Net Adjusted Savings                            | 0       | 0       | 0                            |
| (invingent)           | Planned Savings (Net)                           | 329,193 | 329,193 | 658.386                      |
|                       | Annual % Toward Planned Savings (Net)           | 0%      | 0%      | 0%                           |
|                       | Avg. Savings per Participant (Gross)            | N/A     | N/A     | N/A                          |
|                       | Avg. Savings per Participant (Net)              | N/A     | N/A     | N/A                          |
|                       |                                                 |         |         |                              |
|                       | Total Gross Deemed Demand                       | 0       | 0       | 0                            |
|                       | Realization Rate                                | N/A     | N/A     | N/A                          |
|                       | Realization Rate Adjustment                     | 0       | 0       | 0                            |
|                       | Adjusted Gross Demand                           | 0       | 0       | 0                            |
| Installed             | Net-to-Gross Ratio                              | N/A     | N/A     | N/A                          |
| Demand                | Net-to-Gross Adjustment                         | 0       | 0       | 0                            |
| Reduction             | Net Adjusted Demand                             | 0       | 0       | 0                            |
| (KVV)                 | Planned Demand (Net)                            | 33.2    | 33.2    | 66.4                         |
|                       | Annual % Toward Planned Demand (Net)            | 0%      | 0%      | 0%                           |
|                       | Avg. Peak Demand per Participant (Gross)        | N/A     | N/A     | N/A                          |
|                       | Avg. Demand per Participant (Net)               | N/A     | N/A     | N/A                          |
|                       |                                                 |         |         |                              |
|                       | Total Gross Deemed Demand                       | 0       | 0       | 0                            |
|                       | Realization Rate                                | N/A     | N/A     | N/A                          |
|                       | Realization Rate Adjustment                     | 0       | 0       | 0                            |
| Installed             | Adjusted Gross Demand                           | 0       | 0       | 0                            |
| Winter                | Net-to-Gross Ratio                              | N/A     | N/A     | N/A                          |
| Reduction             | Net-to-Gross Adjustment Net-to-Gross Adjustment | 0       | 0       | 0                            |
| (kW)                  | Net Adjusted Demand                             | 0       | 0       | 0                            |
|                       | Planned Demand (Net)                            | 174.8   | 174.8   | 349.5                        |
|                       | Annual % Toward Planned Demand (Net)            | 0%      | 0%      | 0%                           |
|                       | Avg. Peak Demand per Participant (Gross)        | N/A     | N/A     | N/A                          |

<sup>&</sup>lt;sup>203</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 90% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category    | Item                              | 2022  | 2023  | Program total<br>(2022–2023) |
|-------------|-----------------------------------|-------|-------|------------------------------|
|             | Avg. Demand per Participant (Net) | N/A   | N/A   | N/A                          |
| Cumulativa  | \$Admin. per Participant (Gross)  | N/A   | N/A   | N/A                          |
| Annual      | \$Admin. per kWh/year (Gross)     | N/A   | N/A   | N/A                          |
| Program     | \$Admin. per kW (Gross)           | N/A   | N/A   | N/A                          |
| Performance | \$EM&V per Total Costs (\$)       | 22.8% | 19.7% | 19.7%                        |
|             | \$Rebate per Participant (Gross)  | N/A   | N/A   | N/A                          |



#### 4.13.3.3 Additional Virginia program data

Figure 4-70 and Figure 4-71 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J. Figure 4-70 shows that "Schedule HVAC (electric heat)" and "Schedule HVAC (gas heat)" were the two most implemented measures in 2023.<sup>204</sup>

Figure 4-70. Virginia Non-Residential Building Optimization Program participation by measure and year



<sup>&</sup>lt;sup>204</sup> Note that the participant counts in Figure 4-70 and Figure 4-71 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-39), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-71 shows that the program achieved gross annual energy savings of 13,859 MWh/year in 2023. "Schedule HVAC (electric heat)" and "Schedule HVAC (gas heat)" made up 73% of the total savings in 2023. "Schedule Lighting" made up 7% of the total savings.

Figure 4-71. Virginia Non-Residential Building Optimization Program gross annual energy savings (MWh/year) by measure and year





Figure 4-72 and Figure 4-73 show participation and gross annual energy savings by building type and year.

The program started reported building type in 2023. Large office facilities made up 44% of the participants and they contributed 76% of the program savings.



Figure 4-72. Virginia Non-Residential Building Optimization Program participation by building type and year



Figure 4-73. Virginia Non-Residential Building Optimization Program gross annual energy savings (MWh/year) by building type and year



## 4.13.3.4 Additional North Carolina program data

There were no participants in North Carolina through 2023.



# 4.14 Non-Residential Engagement – Virginia and North Carolina

## 4.14.1 Program description

The Non-Residential Engagement program is intended to educate commercial building operators on best practices to optimize their buildings' energy efficiency. The program provides educational and technical resources to qualifying facility

managers via an online portal at no cost to the customer. The portal provides educational information and engages the customer by presenting a series of challenges which allows the customer to earn points and compete against facility management teams from other buildings.

The challenges include but are not limited to a review and optimization of the following systems:

- Outside air damper operation
- Supply fan operation and setpoints
- Airside economizer operation and performance
- Air-handler supply air temperature sequences and setpoints
- HVAC schedules and zone temperature setbacks
- Lighting levels and schedules
- Condenser water setpoint and sequencing
- Chilled water temperature setpoint and sequencing
- Off-peak heating loads and lockouts
- Variable air volume box sequencing

Non-residential customers who have not opted out of the demand-side management/energy efficiency rider are eligible for this program.

The SCC approved the Non-Residential Engagement program as part of the DSM Phase IX programs on September 7, 2021 (Case No. PUR – 2020 – 00274) for the five-year period of January 1, 2022, through December 31, 2026. The program officially launched in Virginia on April 10, 2022. The North Carolina Utilities Commission approved the Non-Residential Engagement program as part of the DSM Phase IX programs on May 10, 2022 (Docket No. E-22, SUB 616).<sup>205</sup> Customers are required to complete a full twelve-months of engagement with the online portal and as a result, no participants have been recorded in 2022 or 2023.

# 4.14.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-41 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.



<sup>205</sup> Non-Residential Customer Engagement Program T&C's



#### Table 4-41. Non-Residential Engagement Program initial planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 7                         |
| Average annual energy savings (kWh/year) per participant                   | 81,802                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 8.25                      |
| Gross average winter coincident peak demand reduction (kW) per participant | 43.43                     |
| Net average annual energy savings (kWh/year) per participant               | 73,622                    |
| Net average summer coincident peak demand reduction (kW) per participant   | 7.43                      |
| Net average winter coincident peak demand reduction (kW) per participant   | 39.09                     |
| Average rebate (\$US) per participant                                      | \$9,900                   |

# 4.14.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 4.14.3.1 Key Virginia program data

Table 4-42 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX L shows performance indicators by all years and months, and program benefit cost scores.

| Category         | Item                            | 2021    | 2022        | 2023        | (2021–2023)  |
|------------------|---------------------------------|---------|-------------|-------------|--------------|
| Operations       | Direct rebate                   |         |             |             |              |
| and              | Direct implementation           |         |             |             |              |
| Management       | Direct EM&V                     |         |             |             |              |
| Costs (\$)       | Indirect other (administrative) | \$380   | \$25,032    | \$37,026    | \$62,438     |
|                  |                                 |         |             |             |              |
|                  | Total <sup>207</sup>            | \$8,109 | \$599,509   | \$547,994   | \$1,155,612  |
| Total costs (\$) | Planned                         | \$0     | \$1,536,746 | \$1,449,187 | \$2,985,933  |
| Total Costs (\$) | Variance                        | \$8,109 | -\$937,237  | -\$901,193  | -\$1,830,321 |
|                  | Annual % of planned             | N/A     | 39%         | 38%         | 39%          |
|                  |                                 |         |             |             |              |
|                  | Total (Gross)                   | 0       | 0           | 0208        | 0            |
| Darticipanto     | Planned (Gross)                 | 0       | 54          | 54          | 108          |
| Farticipants     | Variance                        | 0       | -54         | -54         | -108         |
|                  | Annual % of planned (Gross)     | N/A     | 0%          | 0%          | 0%           |

#### Table 4-42. Virginia Non-Residential Engagement Program performance indicators (2021–2023)<sup>206</sup>

<sup>&</sup>lt;sup>206</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>207</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>208</sup> There was no Virginia participation in 2023 due to requirements for a full year of customer engagement with the online portal.



| Category                                           | Item                                     | 2021  | 2022      | 2023      | Program total<br>(2021–2023) |
|----------------------------------------------------|------------------------------------------|-------|-----------|-----------|------------------------------|
|                                                    | Total gross deemed savings               | 0     | 0         | 0         | 0                            |
|                                                    | Realization rate                         | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Realization rate adjustment              | N/A   | N/A       | N/A       | N/A                          |
| Installed                                          | Adjusted gross savings                   | N/A   | N/A       | N/A       | N/A                          |
| Installed                                          | Net-to-gross ratio                       | N/A   | N/A       | N/A       | N/A                          |
| Energy                                             | Net-to-gross adjustment                  | N/A   | N/A       | N/A       | N/A                          |
| (kWh/year)                                         | Net adjusted savings                     | N/A   | N/A       | N/A       | N/A                          |
| () out /                                           | Planned savings (Net)                    | 0     | 3,975,577 | 3,975,577 | 7,951,154                    |
|                                                    | Annual % toward planned savings (Net)    | N/A   | 0%        | 0%        | 0%                           |
|                                                    | Avg. savings per participant (Gross)     | 0     | 0         | 0         | 0                            |
|                                                    | Avg. savings per participant (Net)       | 0     | 0         | 0         | 0                            |
|                                                    | Total gross deemed demand                | 0     | 0         | 0         | 0                            |
|                                                    | Realization rate                         | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Realization rate adjustment              | N/A   | N/A       | N/A       | N/A                          |
| Installed<br>Summer<br>Demand<br>Reduction<br>(kW) | Adjusted gross demand                    | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Net-to-gross ratio                       | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Net-to-gross adjustment                  | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Net adjusted demand                      | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Planned demand (Net)                     | 0     | 401       | 401       | 802                          |
|                                                    | Annual % toward planned demand (Net)     | N/A   | 0%        | 0%        | 0%                           |
|                                                    | Avg. peak demand per participant (Gross) | N/A   | 0         | 0         | 0                            |
|                                                    | Avg. demand per participant (Net)        | N/A   | 0         | 0         | 0                            |
|                                                    |                                          |       |           |           |                              |
|                                                    | Total gross deemed demand                | 0     | 0         | 0         | 0                            |
|                                                    | Realization rate                         | N/A   | N/A       | N/A       | N/A                          |
|                                                    | Realization rate adjustment              | N/A   | N/A       | N/A       | N/A                          |
| Installed                                          | Adjusted gross demand                    | N/A   | N/A       | N/A       | N/A                          |
| Winter                                             | Net-to-gross ratio                       | N/A   | N/A       | N/A       | N/A                          |
| Demand                                             | Net-to-gross adjustment                  | N/A   | N/A       | N/A       | N/A                          |
| Reduction                                          | Net adjusted demand                      | N/A   | N/A       | N/A       | N/A                          |
| (KVV)                                              | Planned demand (Net)                     | 0     | 2,111     | 2,111     | 4,221                        |
|                                                    | Annual % toward planned demand (Net)     | N/A   | 0%        | 0%        | 0%                           |
|                                                    | Avg. peak demand per participant (Gross) | 0     | 0         | 0         | 0                            |
|                                                    | Avg. demand per participant (Net)        | 0     | 0         | 0         | 0                            |
|                                                    | \$Admin_per participant (Gross)          | N/A   | N/A       | N/A       | N/A                          |
| Cumulative                                         | \$Admin_per_kWh/year (Gross)             | N/A   | N/A       | N/A       | N/A                          |
| Annual                                             | \$Admin_per kW (Gross)                   | N/A   | N/A       | N/A       | N/A                          |
| Program                                            | \$EM&V per total costs (\$)              | 43.4% | 7 7%      | 5.2%      | 5.2%                         |
| performance                                        | \$Rebate per participant (Gross)         | N/A   | N/A       | N/A       | N/A                          |
|                                                    | the second per participant (01000)       | 1471  | 14/1      | 1.1.1     |                              |



## 4.14.3.2 Key North Carolina program data

Table 4-43 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators by all years and months, and program benefit cost scores.

| Table 4-43, North Carolina Non-Residential Engagement Program performance indicate | rs (2022-2023)206 |
|------------------------------------------------------------------------------------|-------------------|
|------------------------------------------------------------------------------------|-------------------|

| Category              | Item                                  | 2022      | 2023             | Program<br>total<br>(2022–2023) |
|-----------------------|---------------------------------------|-----------|------------------|---------------------------------|
|                       | Direct rebate                         |           |                  |                                 |
| Operations and        | Direct implementation                 |           |                  |                                 |
| management costs (\$) | Direct EM&V                           |           |                  |                                 |
|                       | Indirect other (administrative)       | \$627     | \$2,319          | \$2,947                         |
|                       | Total <sup>207</sup>                  | \$15,022  | \$34,327         | \$49,349                        |
|                       | Planned                               | \$55,717  | \$89,027         | \$144,744                       |
| lotal costs (\$)      | Variance                              | -\$40,695 | -\$54,700        | -\$95,395                       |
|                       | Annual % of planned                   | 27%       | 39%              | 34%                             |
|                       | Total (Gross)                         | 0         | 0 <sup>209</sup> | 0                               |
|                       | Planned (Gross)                       | 3         | 3                | 6                               |
| Participants          | Variance                              | -3        | -3               | -6                              |
|                       | Annual % of planned (Gross)           | 0%        | 0%               | 0%                              |
|                       | Total gross deemed savings            | 0         | 0                | 0                               |
|                       | Realization rate                      | N/A       | N/A              | N/A                             |
|                       | Realization rate adjustment           | N/A       | N/A              | N/A                             |
|                       | Adjusted gross savings                | N/A       | N/A              | N/A                             |
|                       | Net-to-gross ratio                    | N/A       | N/A              | N/A                             |
| Installed energy      | Net-to-gross adjustment               | N/A       | N/A              | N/A                             |
| savings (kwingear)    | Net adjusted savings                  | N/A       | N/A              | N/A                             |
|                       | Planned savings (Net)                 | 220,865   | 220,865          | 441,731                         |
|                       | Annual % toward planned savings (Net) | 0%        | 0%               | 0%                              |
|                       | Avg. savings per participant (Gross)  | 0         | 0                | 0                               |
| 1040                  | Avg. savings per participant (Net)    | 0         | 0                | 0                               |
|                       | Total gross deemed demand             | 0         | 0                | 0                               |
|                       | Realization rate                      | N/A       | N/A              | N/A                             |
| Installed summer      | Realization rate adjustment           | N/A       | N/A              | N/A                             |
| demand reduction      | Adjusted gross demand                 | N/A       | N/A              | N/A                             |
| (((**)                | Net-to-gross ratio                    | N/A       | N/A              | N/A                             |
|                       | Net-to-gross adjustment               | N/A       | N/A              | N/A                             |

<sup>209</sup> There was no North Carolina participation in 2023 due to requirements for a full year of customer engagement with the online portal.



| Category             | Category                                 |      | 2023 | Program<br>total<br>(2022–2023) |
|----------------------|------------------------------------------|------|------|---------------------------------|
|                      | Net adjusted demand                      | N/A  | N/A  | N/A                             |
|                      | Planned demand (Net)                     | 22   | 22   | 44                              |
|                      | Annual % toward planned demand (Net)     | 0%   | 0%   | 0%                              |
|                      | Avg. peak demand per participant (Gross) | 0    | 0    | 0                               |
|                      | Avg. demand per participant (Net)        | 0    | 0    | 0                               |
|                      | Total gross deemed demand                | 0    | 0    | 0                               |
|                      | Realization rate                         | N/A  | N/A  | N/A                             |
|                      | Realization rate adjustment              | N/A  | N/A  | N/A                             |
|                      | Adjusted gross demand                    | N/A  | N/A  | N/A                             |
| Installed winter     | Net-to-gross ratio                       | N/A  | N/A  | N/A                             |
| demand reduction     | Net-to-gross adjustment                  | N/A  | N/A  | N/A                             |
| (kW)                 | Net adjusted demand                      | N/A  | N/A  | N/A                             |
|                      | Planned demand (Net)                     | 117  | 117  | 234                             |
|                      | Annual % toward planned demand (Net)     | 0%   | 0%   | 0%                              |
|                      | Avg. peak demand per participant (Gross) | 0    | 0    | 0                               |
|                      | Avg. demand per participant (Net)        | 0    | 0    | 0                               |
|                      | \$Admin. per participant (Gross)         | N/A  | N/A  | N/A                             |
|                      | \$Admin. per kWh/year (Gross)            | N/A  | N/A  | N/A                             |
| Cumulative Annual    | \$Admin. per kW (Gross)                  | N/A  | N/A  | N/A                             |
| r rogram performance | \$EM&V per total costs (\$)              | 4.4% | 2.9% | 2.9%                            |
|                      | \$Rebate per participant (Gross)         | N/A  | N/A  | N/A                             |



# 4.15 Non-Residential Prescriptive Enhanced – Virginia and North Carolina

# 4.15.1 Program description

This program is a new iteration of the Non-Residential Prescriptive program, which stopped enrolling new customers at the end of 2021. This new iteration of the program was started in Phase IX and was approved in Virginia in the Final Order to Case No. PUR-2020-00274 on September 7, 2021. It was approved in North Carolina in the Final Order to Docket No. E-22, SUB 617 on March 18: 2022.



Qualifying customers are eligible to pursue one or more of the qualified measures through a participating contractor registered with the program. To qualify for this program, the customer must be responsible for the electric bill and must be the owner of the facility or reasonably able to secure permission to complete the measures. Upon completion of the work, a rebate application is submitted by the contractor. Customers can either opt to receive the rebate directly or authorize the rebate to be paid to the contractor. Customers are not counted as participants until a completed application form is processed and a rebate has been issued.

The program measures offered are primarily energy efficiency measures designed to decrease energy consumption through replacement of inefficient equipment, installation of new equipment that exceeds current building code efficiency standards and recommissioning of existing HVAC equipment. Measures eligible to receive a rebate include those shown in Table 4-44.

In 2023, the program continued both conventional (bill inserts, brochures, trade shows, etc.), web-based (internet pop-up ads, e-mail campaigns, etc.), and telephone marketing approaches. In 2024, the program will be expanded to include measures that were previously included in the Non-Residential Cooling and Heating Efficiency program, Non-Residential Window Film program, and Non-Residential Manufacturing programs, which are closing at the end of 2023.<sup>210</sup>

| End use            | Measure                             |  |
|--------------------|-------------------------------------|--|
|                    | Commercial convection oven          |  |
|                    | Commercial combination oven         |  |
| Cooking            | Commercial fryer                    |  |
| Cooking            | Commercial griddle                  |  |
|                    | Commercial hot food holding cabinet |  |
|                    | Commercial steam cooker             |  |
|                    | Domestic heat pump water heater     |  |
| Domestic Hot water | Pre-Rinse sprayer                   |  |
| UNAC               | Air conditioning tune-up            |  |
| HVAC               | Duct test and seal                  |  |

#### Table 4-44. Measures offered through Non-Residential Prescriptive Enhanced Program

<sup>&</sup>lt;sup>210</sup> The SCC approved the Non-Residential Prescriptive Bundle program in its Final Order to Case No. PUR-2022-00210.



| End use             | Measure                                                          |  |  |
|---------------------|------------------------------------------------------------------|--|--|
|                     | Electronically commutated motor                                  |  |  |
|                     | Guest room occupancy                                             |  |  |
|                     | Parking ventilation                                              |  |  |
|                     | Variable speed drives on kitchen exhaust fan                     |  |  |
|                     | Commercial dishwasher                                            |  |  |
|                     | Commercial dryer                                                 |  |  |
| Plug Load/Appliance | Commercial washing machine                                       |  |  |
|                     | Food seal wrapper                                                |  |  |
|                     | Ozone laundry                                                    |  |  |
|                     | Heat pump pool heater                                            |  |  |
| Recreation          | pool spa cover                                                   |  |  |
|                     | Variable speed pool pump                                         |  |  |
|                     | Commercial freezers and refrigerators                            |  |  |
|                     | Commercial ice maker                                             |  |  |
|                     | Door closer (cooler and freezer)                                 |  |  |
|                     | Door Gasket (cooler and freezer)                                 |  |  |
| Refrigeration       | Evaporator fan electronically commutated motor<br>(ECM) retrofit |  |  |
|                     | Low/Anti-Sweat Door Film                                         |  |  |
|                     | Refrigeration condenser coil cleaning                            |  |  |
|                     | Strip curtain (cooler and freezer)                               |  |  |

# 4.15.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 4-45 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.

Table 4-45. Non-Residential Prescriptive Enhanced Program planning assumptions

| Assumption                                                                 | Value                     |
|----------------------------------------------------------------------------|---------------------------|
| Target market                                                              | Non-residential customers |
| NTG factor                                                                 | 90%                       |
| Measure life (years)                                                       | 6                         |
| Gross average annual energy savings per participant (kWh/year)             | 29,999                    |
| Gross average summer coincident peak demand reduction per participant (kW) | 6.4                       |
| Gross average winter coincident peak demand reduction per participant (kW) | 4.7                       |
| Net average summer coincident peak demand reduction (kW) per participant   | 5.7                       |
| Net average winter coincident peak demand reduction (kW) per participant   | 4.2                       |
| Net average annual energy savings per participant (kWh/year)               | 26,999                    |
| Net average coincident peak demand reduction (kW) per participant          | 5.5                       |
| Average rebate per participant (\$US)                                      | \$4,547                   |



### 4.15.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

### 4.15.3.1 Key Virginia program data

Table 4-46 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Category                        | Item                                                    | 2021          | 2022        | 2023         | Program total<br>(2021–2023) |
|---------------------------------|---------------------------------------------------------|---------------|-------------|--------------|------------------------------|
| Operations                      | Direct Rebate                                           |               |             |              |                              |
| and                             | Direct Implementation                                   |               |             |              |                              |
| Management                      | Direct EM&V                                             |               |             |              |                              |
| Costs (\$)                      | Indirect Other (Administrative)                         | \$1,549       | \$236,025   | \$683,968    | \$921,542                    |
|                                 | Total <sup>212</sup>                                    | \$33.042      | \$5 652 798 | \$10 122 762 | \$15 808 601                 |
| 0.0                             | Diapped                                                 | φ00,042<br>¢0 | \$4,002,700 | \$4 019 740  | \$9.247.007                  |
| Total Costs (\$)                | Variance                                                | 00            | \$4,229,107 | \$4,010,740  | \$0,247,307                  |
|                                 | Variance                                                | \$33,042      | \$1,423,631 | \$6,104,022  | \$7,500,095                  |
|                                 | Annual % of Planned                                     | N/A           | 134%        | 252%         | 192%                         |
|                                 | Total (Gross)                                           | 0             | 366         | 595          | 961                          |
| 2.11.1.1                        | Planned (Gross)                                         | 0             | 564         | 564          | 1,128                        |
| Participants                    | Variance                                                | 0             | -198        | 31           | -167                         |
|                                 | Annual % of Planned (Gross)                             | N/A           | 65%         | 105%         | 85%                          |
|                                 |                                                         |               | 0.040.450   | 44.050.004   | 00 400 050                   |
|                                 | Total Gross Deemed Savings                              | 0             | 8,848,159   | 14,350,691   | 23,198,850                   |
|                                 | Realization Rate                                        | N/A           | 100%        | 100%         | 100%                         |
|                                 | Realization Rate Adjustment                             | 0             | 0           | 0            | 0                            |
| Installed                       | Adjusted Gross Savings                                  | 0             | 8,848,159   | 14,350,691   | 23,198,850                   |
| Energy<br>Savings<br>(kWh/year) | Net-To-Gross Rate Weighted<br>by Measure <sup>213</sup> | N/A           | 90%         | 90%          | 90%                          |
|                                 | Net-To-Gross Adjustment                                 | 0             | -884,816    | -1,435,069   | -2,319,885                   |
|                                 | Net Adjusted Savings                                    | 0             | 7,963,344   | 12,915,622   | 20,878,965                   |
|                                 | Planned Savings (Net)                                   | N/A           | 15,227,492  | 15,227,492   | 30,454,985                   |

| Table 4-46, Virginia Non-Residential Prescriptive Enhanced Program performance indicators (2021 | -2023)21 |
|-------------------------------------------------------------------------------------------------|----------|
|-------------------------------------------------------------------------------------------------|----------|

<sup>&</sup>lt;sup>211</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>212</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>213</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 98% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category             | Item                                                    | 2021 | 2022    | 2023     | Program total<br>(2021–2023) |
|----------------------|---------------------------------------------------------|------|---------|----------|------------------------------|
|                      | Annual % Toward Planned<br>Savings (Net)                | N/A  | 52.3%   | 84.8%    | 68.6%                        |
|                      | Avg. Savings per Participant<br>(Gross)                 | N/A  | 24,175  | 24,119   | 24,140                       |
|                      | Avg. Savings per Participant<br>(Net)                   | 0    | 21,758  | 21,707   | 21,726                       |
|                      | Total Gross Deemed Demand                               | 0    | 5 507 0 | 14 720 0 | 20 318 0                     |
|                      | Realization Rate                                        | N/A  | 100%    | 100%     | 20,310.9                     |
|                      | Realization Rate Adjustment                             | 0    | 100 /8  | 100 %    | 100 %                        |
|                      | Adjusted Gross Domand                                   | 0    | 5 507 0 | 14 720 0 | 20.318.0                     |
| Installed            | Net-To-Gross Rate Weighted<br>by Measure <sup>213</sup> | N/A  | 90%     | 90%      | 90%                          |
| Summer               | Net-to-Gross Adjustment                                 | 0    | -559.8  | -1,472,1 | -2,031.9                     |
| Demand               | Net Adjusted Demand                                     | 0    | 5,038.2 | 13,248.8 | 18,287.0                     |
| Reduction            | Planned Demand (Net)                                    | 0    | 3,222.4 | 3,222.4  | 6,444.8                      |
|                      | Annual % Toward Planned<br>Reduction (Net)              | N/A  | 156.3%  | 411.2%   | 283.7%                       |
|                      | Avg. Demand per Participant<br>(Gross)                  | N/A  | 15.3    | 24.7     | 21.1                         |
|                      | Avg. Demand per Participant<br>(Net)                    | N/A  | 13.8    | 22.3     | 19.0                         |
|                      |                                                         |      |         |          |                              |
|                      | Total Gross Deemed Demand                               | 0    | 853.6   | 3,845.9  | 4,699.5                      |
|                      | Realization Rate                                        | N/A  | 100%    | 100%     | 100%                         |
|                      | Realization Rate Adjustment                             | 0    | 0       | 0        | 0                            |
|                      | Adjusted Gross Demand                                   | 0    | 853.6   | 3,845.9  | 4,699.5                      |
| Installed            | by Measure <sup>213</sup>                               | N/A  | 90%     | 5070     | 30 /0                        |
| Winter               | Net-to-Gross Adjustment                                 | 0    | -85.4   | -384.6   | -470.0                       |
| Demand               | Net Adjusted Demand                                     | 0    | 768.2   | 3,461.3  | 4,229.6                      |
| (kW)                 | Planned Demand (Net)                                    | 0    | 2,361.2 | 2,361.2  | 4,722.3                      |
| ()                   | Annual % Toward Planned<br>Reduction (Net)              | N/A  | 32.5%   | 146.6%   | 89.6%                        |
|                      | Avg. Demand per Participant<br>(Gross)                  | N/A  | 2.3     | 6.5      | 4.9                          |
|                      | Avg. Demand per Participant<br>(Net)                    | N/A  | 2.1     | N/A      | 4.4                          |
| Cumulative<br>Annual | \$Admin. per Participant<br>(Gross)                     | N/A  | \$649   | \$959    | \$959                        |



| Category               | Item                                | 2021  | 2022     | 2023     | Program total<br>(2021–2023) |
|------------------------|-------------------------------------|-------|----------|----------|------------------------------|
| Program<br>Performance | \$Admin. per kWh/year (Gross)       | N/A   | \$0.03   | \$0.04   | \$0.04                       |
|                        | \$Admin. per kW (Gross)             | N/A   | \$42     | \$45     | \$45                         |
|                        | \$EM&V per \$Total                  | 80.2% | 3.8%     | 2.4%     | 2.4%                         |
|                        | \$Rebate per Participant<br>(Gross) | N/A   | \$11,883 | \$13,164 | \$13,164                     |

## 4.15.3.2 Key North Carolina program data

Table 4-47 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

| Table 4-47. North Carolina Non-Residential Prescr | iptive Program performance indicators (2022–2023)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | for the state of t |

| Category                               | Item                                                    | 2022      | 2023       | Program total<br>(2022–2023) |
|----------------------------------------|---------------------------------------------------------|-----------|------------|------------------------------|
|                                        | Direct Rebate                                           |           |            |                              |
| Operations and                         | Direct Implementation                                   |           |            |                              |
| Management Costs (\$)                  | Direct EM&V                                             |           |            |                              |
|                                        | Indirect Other (Administrative)                         | \$907     | \$6,918    | \$7,826                      |
|                                        | Total <sup>212</sup>                                    | \$21,735  | \$102,393  | \$124,127                    |
|                                        | Planned                                                 | \$108,401 | \$246,881  | \$355,283                    |
| Total Costs (\$)                       | Variance                                                | -\$86,667 | -\$144,489 | -\$231,155                   |
|                                        | Annual % of Planned                                     | 20%       | 41%        | 35%                          |
|                                        | Total (Gross)                                           | 0         | 13         | 13                           |
|                                        | Planned (Gross)                                         | 36        | 36         | 72                           |
| Participants                           | Variance                                                | -36       | -23        | -59                          |
|                                        | Annual % of Planned (Gross)                             | 0%        | 36%        | 18%                          |
|                                        | Total Gross Deemed Savings                              | 0         | 22.226     | 22.226                       |
|                                        | Realization Rate                                        | N/A       | 100%       | 100%                         |
|                                        | Realization Rate Adjustment                             | 0         | 0          | 0                            |
|                                        | Adjusted Gross Savings                                  | 0         | 22,226     | 22,226                       |
| Installed Energy Savings<br>(kWh/year) | Net-To-Gross Rate Weighted by<br>Measure <sup>213</sup> | N/A       | 90%        | 90%                          |
|                                        | Net-To-Gross Adjustment                                 | 0         | -2,223     | -2,223                       |
|                                        | Net Adjusted Savings                                    | 0         | 20,003     | 20,003                       |
|                                        | Planned Savings (Net)                                   | 971,968   | 971,968    | 1,943,935                    |



| Category                  | Item                                                    | 2022  | 2023    | Program total<br>(2022–2023) |
|---------------------------|---------------------------------------------------------|-------|---------|------------------------------|
|                           | Annual % Toward Planned Savings (Net)                   | 0%    | 2.06%   | 1.03%                        |
|                           | Avg. Savings per Participant (Gross)                    | N/A   | 1,710   | 1,710                        |
|                           | Avg. Savings per Participant (Net)                      | N/A   | 1,539   | 1,539                        |
|                           | Total Gross Deemed Demand                               | 0     | 10.2    | 10.2                         |
|                           | Realization Rate                                        | N/A   | 100%    | 100%                         |
|                           | Realization Rate Adjustment                             | 0     | 0       | 0                            |
|                           | Adjusted Gross Demand                                   | 0     | 10.2    | 10.2                         |
| Installed Summer Demand   | Net-To-Gross Rate Weighted by<br>Measure <sup>213</sup> | N/A   | 90%     | 90%                          |
| Reduction (kW)            | Net-to-Gross Adjustment                                 | 0     | -1.0    | -1.0                         |
|                           | Net Adjusted Demand                                     | 0     | 9.2     | 9.2                          |
|                           | Planned Demand (Net)                                    | 205.7 | 205.7   | 411.4                        |
|                           | Annual % Toward Planned Reduction (Net)                 | 0%    | 4.48%   | 2.24%                        |
|                           | Avg. Demand per Participant (Gross)                     | N/A   | 0.8     | 0.8                          |
|                           | Avg. Demand per Participant (Net)                       | N/A   | 0.7     | 0.7                          |
|                           | Total Gross Deemed Demand                               | 0     | 15.0    | 15.0                         |
|                           | Realization Rate                                        | N/A   | 100%    | 100%                         |
|                           | Realization Rate Adjustment                             | 0     | 0       | 0                            |
|                           | Adjusted Gross Demand                                   | 0     | 15.0    | 15.0                         |
| Installed Winter Demand   | Net-To-Gross Rate Weighted by<br>Measure <sup>213</sup> | N/A   | 90%     | 90%                          |
| Reduction (kW)            | Net-to-Gross Adjustment                                 | 0     | -1.5    | -1.5                         |
|                           | Net Adjusted Demand                                     | 0     | 13.5    | 13.5                         |
|                           | Planned Demand (Net)                                    | 150.7 | 150.7   | 301.4                        |
|                           | Annual % Toward Planned Reduction (Net)                 | 0%    | 8.98%   | 4.49%                        |
|                           | Avg. Demand per Participant (Gross)                     | N/A   | , 1.2   | 1.2                          |
|                           | Avg. Demand per Participant (Net)                       | N/A   | 1.0     | 1.0                          |
|                           | Annual \$Admin. per Participant (Gross)                 | N/A   | \$602   | \$602                        |
|                           | Annual \$Admin. per kWh/year (Gross)                    | N/A   | \$0     | \$0                          |
| Cumulative Annual Program | Annual \$Admin. per kW (Gross)                          | N/A   | \$765   | \$765                        |
| Performance               | Annual \$EM&V per \$Total                               | 14.2% | 10.3%   | 10.3%                        |
|                           | Annual \$Rebate per Participant (Gross)                 | N/A   | \$2,672 | \$2,672                      |



#### 4.15.3.1 Additional Virginia program data

Figure 4-74 and Figure 4-75 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J. Figure 4-74 shows that AC tune-ups continue to be the most frequently performed measure, followed by duct test and seal.<sup>214</sup>





<sup>&</sup>lt;sup>214</sup> Note that the participant counts in Figure 4-74 and Figure 4-75 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 4-46), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 4-75 shows that the highest amount of gross annual energy savings was generated by AC tune-ups in 2023 (41%), followed by refrigeration condenser coil cleaning (35%). The remaining measures account for 24% of 2023 savings.

Figure 4-75. Virginia Non-Residential Prescriptive Program gross annual energy savings (MWh/year) by measure and year





Figure 4-76 and Figure 4-77 show participation and gross annual energy savings by building type and year. In 2023, the largest proportion of participants were in "other" buildings, followed by "lodging," "mercantile retail, non-mall," "office" and "food sales (convenience store)."



Figure 4-76. Virginia Non-Residential Prescriptive Program participation by building type and year



In 2023, "food sales (grocery)" and "lodging (hotel, motel and dormitory)" participants continued to contribute a majority of savings (73%) to the program. However, savings for "office (large, >= 40ksf)" participants increased the most, to 16% of 2023 savings, from 9% in 2022.

Figure 4-77. Virginia Non-Residential Prescriptive Program gross annual energy savings (MWh/year) by building type and year.





### 4.15.3.2 Additional North Carolina program data

2023 was the first full year of the program operations in North Carolina. AC tune-ups were performed by all participants and accounted for 77% of savings. Ten of the 13 participants tested and sealed their ducts. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 4-78 and Figure 4-79 show participation and gross annual energy savings by building type and year, in North Carolina. "Mercantile retail, non-mall" accounted for a majority (31%) of building types in 2023. Food Service (Fast Food) and Public Assembly were the second most frequent building types.






Figure 4-79 shows that most of the savings were realized Mercantile (Retail, Non-Mall) realized the highest amount of savings in 2023, followed by Food Sales, Food Service, and Education. Collectively, these four building types account for 75% of 2023 energy savings.







## **5 PEAK SHAVING**

## 5.1 Non-Residential Distributed Generation – Virginia

#### 5.1.1 Program description

The DSM Phase II Non-Residential Distributed Generation (DG) program provides qualifying customers with an incentive to curtail load by operating backup generation upon request. Large non-residential customers with at least 200 kW of demand are eligible to participate. Each customer site enrolls a targeted level of dispatchable power (kW) to be available to the Company up to 120 hours per year. Load must be available/dispatchable on 30 minutes' notice. Dispatched power production is measured at each site for each event. The Company has the right to adjust the incentive amount based on evaluated performance if a site's dispatched load is less than 95% of its enrolled load.

The Virginia State Corporation Commission approved the Non-Residential Distributed Generation Pilot on January 17, 2008. The DG Pilot subsequently achieved program status on April 30, 2012, and the pilot officially ended at the end of 2014. In September 2021, the DG program was extended for an additional two years through May 31, 2024.<sup>196</sup> Twenty-one sites were enrolled in 2023, which is consistent with prior years. The fully enrolled program capacity is 5,750 kW.



## 5.1.2 2023 impact analysis

An impact evaluation is conducted annually and the amount of generated load by participant per event-hour interval is measured on-site. The detailed impact report can be found in Appendix G, 2023 Non-Residential Distributed Generation Program Impact Evaluation.

#### 5.1.2.1 Computation of demand reduction

The key performance indicator for the Non-Residential DG program is measured kW generated during dispatch events. Sitelevel realization rates are created by comparing measured generation (kW) to the dispatched power production (kW). Realization rates are calculated for each participant site by event hour and aggregated to the event, seasonal, and annual level.

#### 5.1.2.2 Impact analysis of 2023 dispatch events

The Non-Residential DG Program is evaluated annually using metered power production data to verify event-based dispatched load. The objectives for the Non-Residential DG impact evaluation are:

- 1. To compute aggregate kW of load curtailment for one-hour intervals on each event day
- 2. To compute realization rates comparing dispatched load to generated load reduction
- 3. To describe trends across event intervals of program performance to planned assumptions

From January 1, 2023, through December 31, 2023, the program achieved an overall realization rate of 116% and exceeded its planned realization rate of 95%. Figure 5-1 shows the summer and winter realization rates by year since 2014.

<sup>&</sup>lt;sup>196</sup> Case No. PUR-2020-00274, Commonwealth of Virginia, State Corporation Commission, Petition of Dominion Energy Virginia for approval of its 2020 DSM Update, Final Order September 2021





Figure 5-1. Non-Residential DG annual and seasonal realization rates, 2014–2023

## 5.1.3 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates demand reduction from on-site metering data. Table 5-1 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. For DG, a participant is defined as 1 MW of enrolled generation. For example, a site with 1.25 MW of generation has a participant value of 1.25.

| Assumption             | Value                                                                  |
|------------------------|------------------------------------------------------------------------|
| Target market          | Non-Residential customers with at least 200 kW of<br>backup generation |
| Participant definition | 1 participant equals 1 MW of enrolled generation                       |
| NTG factor             | 100%                                                                   |
| Measure life (years)   | 1                                                                      |

Table 5-1. Non-Residential DG Program initial planning assumptions

#### 5.1.4 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants and demand reduction.

#### 5.1.4.1 Key Virginia program data

Table 5-2 provides performance indicator data from 2012 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program impacts with usage by rate schedule, and program benefit cost scores. Cumulative gross and net impacts are in APPENDIX L.



| Fable 5-2. Virginia Non-Residential Distr | ributed Generation Program perfo | prmance indicators (2012–2023) <sup>197</sup> |
|-------------------------------------------|----------------------------------|-----------------------------------------------|
|-------------------------------------------|----------------------------------|-----------------------------------------------|

| Category     | Item                               | 2021        | 2022       | 2023        | Program total<br>(2012–2023) |
|--------------|------------------------------------|-------------|------------|-------------|------------------------------|
| Operations   | Direct Rebate                      |             |            |             |                              |
| and          | Direct Implementation              |             |            |             |                              |
| Management   | Direct EM&V                        |             |            |             |                              |
| Costs (\$)   | Indirect Other (Administrative)    | \$28,515    | \$25,892   | \$32,135    | \$398,607                    |
|              | Total <sup>198</sup>               | \$608,132   | \$620,104  | \$475,594   | \$7,380,822                  |
| Total Costs  | Planned                            | \$1,015,757 | 1,152,161  | \$1,167,407 | \$15,399,223                 |
| (\$)         | Variance                           | -\$407,626  | -\$532,057 | -\$691,813  | -\$8,018,401                 |
| 1            | Cumulative % of Planned            | 60%         | 54%        | 41%         | 48%                          |
| 1            | Total (Cumulative @ End of Month)  | 5.97        | 5.88       | 5.75        | 5.75                         |
| Participants | Planned                            | 7.1         | 7.1        | 5.9         | 5.9                          |
|              | Variance                           | -1.2        | -1.3       | -0.1        | -0.1                         |
|              | % Toward Planned Total (Net basis) | 84%         | 83%        | 98%         | 98%                          |
|              |                                    |             |            |             |                              |
|              | Total (Cumulative @ End of Month)  | 5,970       | 5,880      | 5,750       | 5,750                        |
|              | Realization Rate                   | 111%        | 104%       | 116%        | 116%                         |
| WW Detential | Net kW                             | 6,627       | 6,115      | 6,688       | 6,688                        |
| kw Potentiai | Planned                            | 7,130       | 7,130      | 5,880       | 5,880                        |
|              | % Toward Planned Total (Net basis) | 93%         | 85%        | 114%        | 114%                         |
|              | Avg. per Net Participant (Net kW)  | 1,110       | 1,040      | 1,163       | 959                          |
| Cumulative   | \$Admin. per Participant (Gross)   | \$57.049    | \$62.325   | \$69.323    | \$69.323                     |
| Annual       | \$Admin, per kW (Gross)            | \$57        | \$62       | \$69        | \$69                         |
| Program      | \$EM&V per Total Costs (\$)        | 13.4%       | 13.3%      | 13.5%       | 13.5%                        |
| Performance  | \$Rebate per Participant (Gross)   | \$828,578   | \$927,835  | \$1,011,339 | \$1,011,339                  |
|              |                                    |             |            |             |                              |

<sup>&</sup>lt;sup>197</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>198</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



## 5.2 Residential Smart Thermostat Rewards – Virginia and North Carolina

#### 5.2.1 Program description

The Residential Thermostat Smart Thermostat Rewards Program<sup>s</sup> was implemented to provide the Company a supply resource by shaving peak electric demand.

The SCC approved the Residential Smart Thermostat Rewards Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No.PUR-2019-00201). As a result, the planned implementation schedule was delayed a year. The program officially launched in Virginia on January 15, 2021 and began enrolling participants in March 2021.<sup>199</sup> It was approved by the NCUC in North Carolina on February 9, 2019 (Docket No. E-22, SUB 594. The program officially launched on April 15, 2021.<sup>200</sup>



Demand response events are called by the Company during times of peak system demand throughout the year. The Smart Rewards Program leverages the demand response functionality of smart thermostats to provide residential load curtailment during periods of high demand on the Dominion Energy grid. Following a pre-event cooling period, thermostat setpoints are increased from the cooler temperatures achieved during pre-cooling to a higher event-period setpoint, which varies by customer and thermostat manufacturer. In addition to the pre-cooling functionality, smart thermostats allow the customer to override the event at the thermostat by simply changing the existing set point at any time during the event.

Residential customers living in an owner-occupied single-family home, townhouse, condominium, or manufactured home with central air conditioners or heat pumps who are not on a time-of-use rate are eligible to enroll. Enrolled customers also receive a "Connected Savings Energy Scorecard" report based on their individual HVAC runtime data and temperature setpoint patterns.

## 5.2.2 Program performance and impact analysis of 2023 events

The Residential Smart Thermostat Rewards Program called 26 events in 2023 spanning 69 event hours. Participation nearly doubled between 2022 and 2023 and by the last event in 2023, there were approximately 25,000 program participants.

The program continues to deliver higher average per-participant impacts than the former Residential AC Cycling Program. The annual impact evaluation of the 2023 season is included in APPENDIX H and includes the following key findings:

In 2023, Dominion Energy expanded the number of eligible thermostats models. As a result, participation nearly
doubled between 2022 and 2023 and increased by 60% between June and September 2023. By the last event in 2023,
there were approximately 25,000 program participants.

<sup>199</sup> Virginia Smart Thermostat Rewards Program - Terms and Conditions.

<sup>200</sup> North Carolina Smart Thermostat Rewards Program - Terms and Conditions.



- In 2023, the evaluated load impact was 1.16 kW per participant at Dominion Energy's summer peak planning conditions. The program continued to deliver the highest average per-participant impact since 2016.
- Ex post impacts averaged across all hours of the event ranged from 0.72 to 1.15 kW.
- First-hour load reduction is consistently higher than subsequent hours (up to 1.45 kW), with load reduction dropping with each additional hour. Strategically leveraging this pattern to address system load reduction while avoiding untimely load increases—through, for example, staggered starting hours—has the potential to increase program impacts.
- The highest load reduction, up to 1.45 kW, occurred during an event that began at 16:00.

Table 5-3 shows the summary of the peak shaving potential from cumulative and net participants through December 31, 2023.

## Table 5-3. Disposition from cumulative and net participants, and peak shaving potential (kW) (through December31, 2023)

| Beduction Easter to         | Particip | ants              | Peak Shaving Potential (kW) |                   |  |
|-----------------------------|----------|-------------------|-----------------------------|-------------------|--|
| Participants/Savings        | Virginia | North<br>Carolina | Virginia                    | North<br>Carolina |  |
| Cumulative Total            | 39,817   | 658               | 46,009                      | 760               |  |
| Reduction for Disenrollment | 6,503    | 128               | 7,514                       | 148               |  |
| Net Total                   | 33,314   | 530               | 38,494                      | 612               |  |

## 5.2.3 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates demand reduction from the annual impact evaluation described in APPENDIX F. Table 5-4 outlines Dominion Energy's initial program planning assumptions. The definition of participants for the Program is the count of unique account numbers.

Table 5-4. Residential Smart Thermostat Rewards Program planning assumptions

| Assumption                                                        | Description |
|-------------------------------------------------------------------|-------------|
| Target market                                                     | Residential |
| NTG factor                                                        | 95%         |
| Measure life (years)                                              | 1           |
| Gross average annual energy savings (kWh/year) per participant    | 0           |
| Net average annual energy savings (kWh/year) per participant      | 0           |
| Net average coincident peak demand reduction (kW) per participant | 1.6         |
| Average rebate (\$US) per participant per year                    | \$18        |

## 5.2.4 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants and demand reduction.

#### 5.2.4.1 Key Virginia program data

Table 5-5 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows



performance indicators for all years and months by measure, a comparison of program impacts with usage by rate schedule, and program benefit cost scores. Cumulative gross and net demand reduction are in APPENDIX L.

| Category            | Item                                                             | 2021             | 2022        | 2023        | Program Total<br>(2020–2023) |
|---------------------|------------------------------------------------------------------|------------------|-------------|-------------|------------------------------|
| and consider at the | Direct Rebate                                                    |                  |             |             |                              |
| Operations and      | Direct Implementation                                            |                  |             |             |                              |
| Costs (\$)          | Direct EM&V                                                      |                  |             |             |                              |
|                     | Indirect Other (Administrative)                                  | \$33,978         | \$47,737    | \$145,954   | \$231,797                    |
| Capital (\$)        | Direct Implementation                                            | \$0              | \$0         | \$0         | \$0                          |
|                     | Total <sup>202</sup>                                             | \$724,644        | \$1,143,292 | \$2,160,129 | \$4,124,809                  |
| T 4 1 0 4 (A)       | Planned                                                          | \$1,892,494      | \$1,914,911 | \$2,209,274 | \$6,016,679                  |
| Total Costs (\$)    | Variance                                                         | -<br>\$1,167,850 | -\$771,619  | -\$49,145   | -\$1,891,870                 |
|                     | Cumulative % of Planned                                          | 38%              | 60%         | 98%         | 69%                          |
|                     | Total (Cumulative @ End of Month)                                | 6.329            | 13.084      | 39.817      | 39.817                       |
|                     | Removals (Uninstalled)/ Deactivations                            | 982              | 2,474       | 6,503       | 6,503                        |
|                     | Net Participation                                                | 5,347            | 10,610      | 33,314      | 33,314                       |
|                     | Planned                                                          | 6,400            | 19,433      | 28,046.0    | 28,046.0                     |
| Participants        | Variance                                                         | -1,053           | -8,823      | 5,268.0     | 5,268.0                      |
|                     | Cum% toward planned total (Net basis)                            | 84%              | 55%         | 119%        | 119%                         |
|                     | Removal (Uninstalled) /Deactivation<br>Rate                      | 16%              | 19%         | 16%         | 16%                          |
|                     | Ex Ante Estimated kW                                             | 1.07             | 0.94        | 1.16        | 1.16                         |
|                     | Peak Shaving Potential kW - Gross<br>Participants                | 6,740            | 12,299      | 46,009      | 46,009                       |
|                     | Removed (Uninstalled) / Deactivated<br>Peak Shaving Potential kW | 1,046            | 2,326       | 7,514       | 7,514                        |
| kW Potential        | Dispatchable Peak Shaving Potential –<br>Net Total kW            | 5,695            | 9,973       | 38,494      | 38,494                       |
|                     | Planned Demand                                                   | 10,176           | 30,898      | 44,593      | 44,593                       |
|                     | % Toward Planned Total                                           | 56%              | 32%         | 86%         | 86%                          |
| Cumulative          | \$Admin. per Participant (Gross)                                 | \$6              | \$7         | \$6         | \$6                          |
| Annual              | \$Admin. per kW (Gross)                                          | \$6              | \$7         | \$5         | \$5                          |

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 $<sup>^{\</sup>rm 201}$  The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>202</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category    | ltem                             | 2021  | 2022  | 2023  | Program Total<br>(2020–2023) |
|-------------|----------------------------------|-------|-------|-------|------------------------------|
| Program     | \$EM&V per Total Costs (\$)      | 13.2% | 16.4% | 11.4% | 11.4%                        |
| Performance | \$Rebate per Participant (Gross) | \$21  | \$25  | \$23  | \$23                         |

#### 5.2.4.2 Key North Carolina program data

Table 5-6 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program impacts with usage by rate schedule, and program benefit cost scores. Cumulative gross and net demand reduction are in APPENDIX L.

| Table 5-6  | North | Carolina | Residential | Smart | Thermostat | Rewards | Program | performance | indicators ( | 2021-2023)144 |
|------------|-------|----------|-------------|-------|------------|---------|---------|-------------|--------------|---------------|
| Table J-0. | North | Garonna  | Residential | omart | mennostut  | newalas | rogram  | periormanoe | maioutors    | LULI LULU     |

| Category                     | Item                                                             | 2021      | 2022      | 2023      | Program Total<br>(2021–2023) |
|------------------------------|------------------------------------------------------------------|-----------|-----------|-----------|------------------------------|
|                              | Direct Rebate                                                    |           |           |           |                              |
| Operations and<br>Management | Direct Implementation                                            |           |           |           |                              |
| Costs (\$)                   | Direct EM&V                                                      |           |           |           |                              |
| (*)                          | Indirect Other (Administrative)                                  | \$860     | \$1,864   | \$3,850   | \$6,575                      |
| Capital (\$)                 | Direct Implementation                                            | \$0       | \$0       | \$0       | \$0                          |
|                              | Total <sup>202</sup>                                             | \$18,350  | \$44,643  | \$56,984  | \$119,978                    |
|                              | Planned                                                          | \$95,307  | \$101,201 | \$110,439 | \$306,947                    |
| Total Costs (\$)             | Variance                                                         | -\$76,957 | -\$56,558 | -\$53,455 | -\$186,969                   |
|                              | Cumulative % of Planned                                          | 19%       | 44%       | 52%       | 39%                          |
|                              | Total (Cumulative @ End of Month)                                | 86        | 243       | 658       | 658                          |
|                              | Removals (Uninstalled)/ Deactivations                            | 15        | 45        | 128       | 128                          |
|                              | Net Participation                                                | 71        | 198       | 530       | 530                          |
|                              | Planned                                                          | 408       | 1,240     | 1,790     | 1,790                        |
| Participants                 | Variance                                                         | -337      | -1,042    | -1,260    | -1,260                       |
|                              | Cum % toward planned total (Net basis)                           | 17.4%     | 16.0%     | 29.6%     | 29.6%                        |
|                              | Removal (Uninstalled) /Deactivation<br>Rate                      | 17%       | 19%       | 19%       | 19%                          |
|                              | Ex Ante Estimated kW                                             | 1.07      | 0.94      | 1.16      | 1.16                         |
|                              | Peak Shaving Potential kW - Gross<br>Participants                | 92        | 228       | 760       | 760                          |
| kW Potential                 | Removed (Uninstalled) / Deactivated<br>Peak Shaving Potential kW | 16        | 42        | 148       | 148                          |
|                              | Dispatchable Peak Shaving Potential –<br>Net Total kW            | 76        | 186       | 612       | 612                          |
|                              | Planned Demand                                                   | 649       | 1,972     | 2,846     | 2,846                        |



| Category    | Item                             | 2021 | 2022  | 2023  | Program Total<br>(2021–2023) |
|-------------|----------------------------------|------|-------|-------|------------------------------|
|             | % Toward Planned Total           | 12%  | 9%    | 22%   | 22%                          |
| Cumulative  | \$Admin. per Participant (Gross) | \$10 | \$11  | \$10  | \$10                         |
| Annual      | \$Admin. per kW (Gross)          | \$9  | \$12  | \$9   | \$9                          |
| Program     | \$EM&V per Total Costs (\$)      | 9.0% | 19.5% | 16.4% | 16.4%                        |
| Performance | \$Rebate per Participant (Gross) | \$18 | \$21  | \$20  | \$20                         |



## 5.3 Residential Electric Vehicle Rewards – Virginia

#### 5.3.1 Program description

The EV Charger Rewards Program provides annual on-bill incentives to residential customers for allowing Dominion Energy (the Company) to leverage the control functions of EV chargers to adjust the charging schedules of Level 2 EV chargers during periods of high electricity demand, otherwise known as demand response (DR) events.



DR events may last up to four hours, with a maximum number of 45 events per year and up to 15 events per month. The Company called 26 events during the summer of 2023, and one winter event in November 2023. Customers may choose to opt out of any DR event.

To participate, a customer must own an eligible Level 2 charger. Dominion provides a separate rebate to participants for the purchase of eligible Level 2 chargers. The charger incentive rebate program is described in Section 2.5.

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched on March 1, 2021.<sup>203</sup>

In 2023, EV program participation grew significantly with the addition of new charger models to the list of those eligible for the program. The Company successfully called 27 demand response events compared to the single test event called in 2022.

## 5.3.2 2023 Residential Electric Vehicle Rewards impact evaluation

The 2023 impact evaluation estimated average per-participant impacts across 27 demand response events. Average event impacts (in kW) are calculated using a weather-adjusted regression methodology. This approach was selected as the most appropriate method given the nature of the events and EV charging behavior. Key findings from the evaluation determined that:

- The program continues to experience strong growth. At the time of the first event on July 3, 2023, there were 1,019 enrolled participants, more than double the enrollment from the previous summer. By the end of November 2023, 1,310 participants were enrolled.
- Participants did not charge as often as expected. The higher-than-expected number of vehicles that were not charging during event hours lowered the overall potential for load reduction impacts.
- Later evening hours showed consistently higher load reduction than earlier hours. This is consistent with the expected
  increase in charging activity when many EV drivers return from work and plug in their cars. Strategically leveraging
  observed patterns of plug-in behavior to address system load reduction has the potential to increase the program's
  effectiveness.

<sup>203</sup> Virginia Residential Electric Vehicle Program Terms and Conditions



• The winter morning baseline load is significantly lower than during the evening or nighttime. While there was still visible load shed during the morning winter event, there is a much lower potential for load reduction due to a significantly lower charging baseline.

#### 5.3.3 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 5-7 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

Table 5-7. Residential Electric Vehicle Rewards Program planning assumptions

| Assumption                                                        | Description           |  |  |
|-------------------------------------------------------------------|-----------------------|--|--|
| Target market                                                     | Residential customers |  |  |
| NTG factor                                                        | 93%                   |  |  |
| Measure life (years)                                              | 10                    |  |  |
| Gross average annual energy savings (kWh/year) per participant    | 0                     |  |  |
| Net average annual energy savings (kWh/year) per participant      | 0                     |  |  |
| Net average coincident peak demand reduction (kW) per participant | 1                     |  |  |
| Average rebate (\$US) per participant per year                    | \$40                  |  |  |

## 5.3.4 Assessment of program progress toward plan

The next subsection describes the program's progress toward planned participants and demand reduction.

#### 5.3.4.1 Key Virginia program data

Table 5-8 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program impacts with usage by rate schedule, and program benefit cost scores. Cumulative gross and net impacts are in APPENDIX L.

Table 5-8. Virginia Residential Electric Vehicle Rewards Program performance indicator data (2020–2023)204

| Category                                   | Item                            | 2021    | 2022    | 2023      | Program total<br>(2020–2023) |
|--------------------------------------------|---------------------------------|---------|---------|-----------|------------------------------|
| Operations and<br>Management<br>Costs (\$) | Direct Rebate                   |         |         |           |                              |
|                                            | Direct Implementation           |         |         |           |                              |
|                                            | Direct EM&V                     |         |         |           |                              |
|                                            | Indirect Other (Administrative) | \$8,557 | \$7,472 | 2 \$4,761 | \$21,389                     |

<sup>&</sup>lt;sup>204</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                                                                                     | Item                                                                    | 2021                                                                                                             | 2022       | 2023                                                                                                                                                                                              | Program total<br>(2020–2023) |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|                                                                                              | Total <sup>205</sup>                                                    | \$182,492                                                                                                        | \$178,959  | \$70,466                                                                                                                                                                                          | \$445,954                    |
| Category Fotal Costs (\$) Participants Cumulative Cumulative Cumulative Corogram Performance | Planned                                                                 | \$299,301                                                                                                        | \$315,959  | \$346,150                                                                                                                                                                                         | \$961,411                    |
| Total Costs (\$)                                                                             | Variance                                                                | -\$116,809                                                                                                       | -\$137,000 | -\$275,684                                                                                                                                                                                        | -\$515,457                   |
|                                                                                              | Annual % of Planned                                                     | 61%                                                                                                              | 57%        | 20%                                                                                                                                                                                               | 46%                          |
|                                                                                              | Total (Cumulative @ End of Month)                                       | 0                                                                                                                | 686        | 1,495                                                                                                                                                                                             | 1,495                        |
|                                                                                              | Removals (Uninstalled) / Deactivations                                  | 0                                                                                                                | 1          | 4                                                                                                                                                                                                 | 4                            |
|                                                                                              | Opt-outs                                                                | 0                                                                                                                | 0          | 0                                                                                                                                                                                                 | 0                            |
|                                                                                              | Adjusted Participants (Cumulative)                                      | 0                                                                                                                | 685        | 1,491                                                                                                                                                                                             | 1,491                        |
| Participants                                                                                 | Net Participation (Cumulative)                                          | 0                                                                                                                | 685        | 1,491                                                                                                                                                                                             | 1,491                        |
| 1 unioipunto                                                                                 | Planned (Cumulative)                                                    | articipation (Cumulative)0685ed (Cumulative)652831nce (Cumulative)-652-146lative % toward planned total (Net-652 | 1,271.0    | 1,271.0                                                                                                                                                                                           |                              |
|                                                                                              | Variance (Cumulative)                                                   | -652                                                                                                             | -146       | 220.0                                                                                                                                                                                             | 220.0                        |
|                                                                                              | Cumulative % toward planned total (Net basis)                           | 0%                                                                                                               | 82.4%      | 117.3%                                                                                                                                                                                            | 117.3%                       |
|                                                                                              | Ex Ante Estimated kW                                                    | 0                                                                                                                | 0          | 2023<br>\$70,466<br>\$346,150<br>-\$275,684<br>20%<br>1,495<br>4<br>0<br>1,491<br>1,491<br>1,271.0<br>220.0<br>117.3%<br>0%<br>301<br>1<br>300<br>1,271<br>23.6%<br>\$14<br>\$71<br>17.6%<br>\$17 | 0%                           |
|                                                                                              | Summer Peak Shaving Potential kW –<br>Gross Devices                     | 0                                                                                                                | 0          | 301                                                                                                                                                                                               | 301                          |
| Summer kW                                                                                    | Removed (Uninstalled) / Deactivated<br>Summer Peak Shaving Potential kW | 0                                                                                                                | 0          | 1                                                                                                                                                                                                 | 1                            |
| Potential                                                                                    | Dispatchable Summer Peak Shaving<br>Potential –Total kW                 | 0                                                                                                                | 0          | 300                                                                                                                                                                                               | 300                          |
|                                                                                              | Planned Summer Demand (Cml)                                             | 652                                                                                                              | 831        | 1,271                                                                                                                                                                                             | 1,271                        |
|                                                                                              | Cumulative % Toward Planned Total                                       | 0                                                                                                                | 0          | 23.6%                                                                                                                                                                                             | 23.6%                        |
| Cumulative                                                                                   | \$Admin. per Participant (Gross)                                        | N/A                                                                                                              | \$24       | \$14                                                                                                                                                                                              | \$14                         |
| Annual                                                                                       | \$Admin. per kW (Gross)                                                 | N/A                                                                                                              | N/A        | \$71                                                                                                                                                                                              | \$71                         |
| Program                                                                                      | \$EM&V per Total Costs (\$)                                             | 15.8%                                                                                                            | 12.8%      | 17.6%                                                                                                                                                                                             | 17.6%                        |
| Performance                                                                                  | \$Rebate per Participant (Gross)                                        | N/A                                                                                                              | \$0        | \$17                                                                                                                                                                                              | \$17                         |

<sup>&</sup>lt;sup>205</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



# 5.4 Residential Water Savings Demand Response – Virginia and North Carolina

## 5.4.1 Program description

The Residential Water Energy Demand Response Program was implemented to provide the Company with a supply resource by making minor, short-term temperature adjustments to heat pump water heaters during peak system demand.

Customers who purchase and install a qualified heat pump hot water heater through the Residential Water Energy Savings Program are offered the opportunity to enroll in this peak demand reduction program. Customers are offered an annual



incentive (in addition to the purchase incentive) to participate in DR program and an additional incentive for each subsequent year of participation.

During a demand response (DR) event, short-term temperature adjustments are made to the water temperature, but customers can override the event-based adjustments, or opt out of a DR prior to the event. DR events may occur between the hours of 6:00 a.m. and 10:00 p.m. (Monday through Sunday, excluding holidays). DR events may last up to four hours with a maximum of 45 events per year. The program began operating in 2023 and enrolled 8 customers. Two events were called in November for a combined total of three controlled hours.

The SCC approved the Water Energy Demand Response Program as part of the DSM Phase IX programs on September 1, 2021 (Case No. PUR-2020-00274). The program officially launched on January 1, 2023.<sup>206</sup>

#### 5.4.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. Table 5-9 outlines Dominion Energy's initial program planning assumptions. The definition of participants for the Program is the count of unique account numbers.

| Assumption                                                        | Description                               |
|-------------------------------------------------------------------|-------------------------------------------|
| Target market                                                     | Residential customers                     |
| NTG factor                                                        | 95%                                       |
| Measure life (years)                                              | 11.6                                      |
| Net average coincident peak demand reduction (kW) per participant | 0.50                                      |
| Average rebate (\$US) per participant per year                    | \$40.00 in first year and \$10 thereafter |

Table 5-9. Residential Water Energy Demand Response Program planning assumptions

<sup>206</sup> North Carolina Residential Water Energy Demand Response Program Terms and Conditions, Virginia Residential Water Energy Demand Response Program Terms and Conditions.



#### 5.4.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants and demand reduction.

#### 5.4.3.1 Key Virginia program data

Table 5-10 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program impacts with usage by rate schedule, and program benefit cost scores. Cumulative gross and net impacts are in APPENDIX L.

| Category                                                                                              | Item                                                             | 2021    | 2022       | 2023                                                                                                                                                          | Program Total<br>(2021–2023) |  |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--|
| 10.00.000                                                                                             | Direct Rebate                                                    |         |            |                                                                                                                                                               |                              |  |
| Operations and                                                                                        | Direct Implementation                                            |         |            |                                                                                                                                                               |                              |  |
| Costs (\$)                                                                                            | Direct EM&V                                                      |         |            |                                                                                                                                                               |                              |  |
|                                                                                                       | Indirect Other (Administrative)                                  | \$430   | \$6,254    | \$6,310                                                                                                                                                       | \$12,994                     |  |
| Capital (\$)                                                                                          | Direct Implementation                                            | \$0     | \$0        | \$0                                                                                                                                                           | \$0                          |  |
|                                                                                                       | Total <sup>208</sup>                                             | \$9,167 | \$149,786  | \$93,391                                                                                                                                                      | \$252,344                    |  |
| Category Operations and Management Costs (\$) Capital (\$) Total Costs (\$) Participants kW Potential | Planned                                                          | \$0     | \$343,042  | \$325,979                                                                                                                                                     | \$669,021                    |  |
|                                                                                                       | Variance                                                         | \$9,167 | -\$193,256 | -\$232,588                                                                                                                                                    | -\$416,677                   |  |
|                                                                                                       | Cumulative % of Planned                                          | N/A     | 44%        | \$6,310<br>\$0<br>\$93,391<br>\$325,979<br>-\$232,588<br>29%<br>8<br>29%<br>8<br>0<br>8<br>1,875<br>-1,867<br>0.43%<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>976 | 38%                          |  |
|                                                                                                       |                                                                  |         |            |                                                                                                                                                               |                              |  |
|                                                                                                       | Total (Cumulative @ End of Month)                                | 0       | 0          | 8                                                                                                                                                             | 8                            |  |
| Participants                                                                                          | Removals (Uninstalled)/ Deactivations                            | 0       | 0          | 0                                                                                                                                                             | 0                            |  |
|                                                                                                       | Net Participation                                                | 0       | 0          | 8                                                                                                                                                             | 8                            |  |
|                                                                                                       | Planned                                                          | 0       | 625        | 1,875                                                                                                                                                         | 1,875                        |  |
|                                                                                                       | Variance                                                         | 0       | -625       | -1,867                                                                                                                                                        | -1,867                       |  |
|                                                                                                       | % toward planned total (Net basis)                               | N/A     | 0%         | 0.43%                                                                                                                                                         | 0.43%                        |  |
|                                                                                                       | Ex ante evaluated kW <sup>209</sup>                              | N/A     | N/A        | N/A                                                                                                                                                           | N/A                          |  |
|                                                                                                       | Peak Shaving Potential kW - Gross<br>Participants                | N/A     | N/A        | N/A                                                                                                                                                           | N/A                          |  |
| kW Potential                                                                                          | Removed (Uninstalled) / Deactivated<br>Peak Shaving Potential kW | N/A     | N/A        | N/A                                                                                                                                                           | N/A                          |  |
|                                                                                                       | Dispatchable Peak Shaving Potential –<br>Net Total kW            | N/A     | N/A        | N/A                                                                                                                                                           | N/A                          |  |
|                                                                                                       | Planned Demand                                                   | 0       | 325        | 976                                                                                                                                                           | 976                          |  |

#### Table 5-10. Virginia Residential Water Energy Demand Response performance indicators (2021–2023)207

<sup>&</sup>lt;sup>207</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>&</sup>lt;sup>208</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>&</sup>lt;sup>209</sup> Ex ante estimated kW will be available following the first program impact analysis.



| Category               | Item                             | 2021  | 2022 | 2023    | Program Total<br>(2021–2023) |  |
|------------------------|----------------------------------|-------|------|---------|------------------------------|--|
|                        | % Toward Planned Total (kW)      | N/A   | N/A  | N/A     | N/A                          |  |
| Cumulative             | \$Admin. per Participant (Gross) | N/A   | N/A  | \$1,624 | \$1,624                      |  |
| Annual                 | \$Admin. per kW (Gross)          | N/A   | N/A  | N/A     | N/A                          |  |
| Program<br>Performance | \$EM&V per Total Costs (\$)      | 41.6% | 8.3% | 5.3%    | 5.3%                         |  |
|                        | \$Rebate per Participant (Gross) | N/A   | N/A  | \$0     | \$0                          |  |

#### 5.4.3.2 Key North Carolina program data

Table 5-11 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators by all years and months, and program benefit cost scores.

| Table 5-11. North Carolina Residential Water Lifergy Demana Response performance mulcators (2022-2023) | Table 5-11 | . North | Carolina | Residential | Water | Energy | <b>Demand Res</b> | ponse | performance indicators | (2022-2023) |
|--------------------------------------------------------------------------------------------------------|------------|---------|----------|-------------|-------|--------|-------------------|-------|------------------------|-------------|
|--------------------------------------------------------------------------------------------------------|------------|---------|----------|-------------|-------|--------|-------------------|-------|------------------------|-------------|

| Category     | Item                                                             |          | 2023      | Program Total<br>(2022–2023) |
|--------------|------------------------------------------------------------------|----------|-----------|------------------------------|
| Operations   | Direct Rebate                                                    |          |           |                              |
| and          | Direct Implementation                                            |          |           |                              |
| Management   | Direct EM&V                                                      |          |           |                              |
| Costs (\$)   | Indirect Other (Administrative)                                  | \$121    | \$376     | \$498                        |
| Capital (\$) | Direct Implementation                                            | \$0      | \$0       | \$0                          |
|              | Total <sup>208</sup>                                             | \$2,910  | \$5,572   | \$8,482                      |
| Total Costs  | Planned                                                          | \$7,328  | \$16,295  | \$23,623                     |
| (\$)         | Variance                                                         | -\$4,418 | -\$10,723 | -\$15,141                    |
|              | Cumulative % of Planned                                          | 40%      | 34%       | 36%                          |
|              | Total (Cumulative @ End of Month)                                | 0        | 0         | 0                            |
|              | Removals (Uninstalled)/ Deactivations                            | 0        | 0         | 0                            |
|              | Net Participation                                                | 0        | 0         | 0                            |
| Participants | Planned                                                          | 40       | 120       | 120                          |
|              | Variance                                                         | -40      | -120      | -120                         |
| *            | Cum % toward planned total (Net basis)                           | 0%       | 0%        | 0%                           |
|              | Ex ante evaluated kW <sup>209</sup>                              | N/A      | N/A       | N/A                          |
|              | Peak Shaving Potential kW - Gross Participants                   | 0        | 0         | 0                            |
|              | Removed (Uninstalled) / Deactivated Peak Shaving<br>Potential kW | N/A      | N/A       | N/A                          |
| kW Potential | Dispatchable Peak Shaving Potential – Net Total kW               | 0        | 0         | 0                            |
|              | Planned Demand                                                   | 21       | 62        | 83                           |
|              | % Toward Planned Total                                           | N/A      | N/A       | N/A                          |



| Category    | Item                             | 2022 | 2023 | Program Total<br>(2022–2023) |
|-------------|----------------------------------|------|------|------------------------------|
| Cumulative  | \$Admin. per Participant (Gross) | N/A  | N/A  | N/A                          |
| Annual      | \$Admin. per kW (Gross)          | N/A  | N/A  | N/A                          |
| Program     | \$EM&V per Total Costs (\$)      | 1.8% | 0.7% | 0.7%                         |
| Performance | \$Rebate per Participant (Gross) | N/A  | N/A  | N/A                          |



#### About DNV

DNV is a global quality assurance and risk management company. Driven by our purpose of safeguarding life, property and the environment, we enable our customers to advance the safety and sustainability of their business. We provide classification, technical assurance, software and independent expert advisory services to the maritime, oil & gas, power and renewables industries. We also provide certification, supply chain and data management services to customers across a wide range of industries. Operating in more than 100 countries, our experts are dedicated to helping customers make the world safer, smarter and greener.